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THE REGULATION OF PRICES.

THE great problems in the industrial world are financial as well as technical, and none are greater than the question of how prices may be so regulated as to make possible a reasonable profit to the manufacturer. Although the price problem underlies every commercial undertaking, all the boasted advancement of our age has failed to evolve any generally-accepted solution of it. Indeed, modern progress has served only to render the situation more complex and confusing, with the growing multiplicity of interests and the increasing keenness of competition in every field of activity. Thus it has come to pass that in many industries the great need for increased skill is not so much in the factory as in the selling-agency, in order that goods may be disposed of at prices which will save the producer from loss. The era is disappearing in which the influence of the government can be invoked to regulate prices or conditions of the markets; the business man must work out his own salvation.

The natural tendency of prices of commodities is unalterably downward. It is the inevitable result of the contest of an army of buyers—every one interested in lowering the price of everything purchased—with a comparatively small number of producers or sellers. In seeking to make the sales upon which the very life of his business depends, each seller is confronted continually with the question of under-selling his competitor, until prices are reduced to the lowest point consistent with profit. So far, this tends to the public benefit, but too many manufacturers are ignorant of the true factors of cost of production, and in the anxiety to do business they sell goods at a loss. Then there are the weak brethren who become so pressed for money that they sell recklessly, in the hope of brighter days in which to recoup present losses.

There is plain sailing so long as a period of improved processes and cheaper raw materials enables manufacturers to gradually lower their prices. But when the utmost reduction from such causes has been reached, a fluctuation in the cost of materials is apt to occur, or a demand for higher wages must be met, or a reduced demand for the goods makes the returns, at the low price, insufficient. To this must be added the operation of the law of steadily falling prices, even after the lowest figure which can be regarded as prudent has been reached. Then what are the manufacturers to do? There is such a thing as prices too low to be honest—*e. g.*, when they are beneath the cost of production. The loss here must fall upon some element of the community, and against the wishes of that element, which places unprofitable price cutting on the same level with highway robbery. For a similar reason, the public good is not enhanced by prices too low to yield a profit. What is the benefit from buying goods for less than their value, if the result is the ultimate failure of the manufacturer, whose losses must fall, in some shape, upon the rest of the community? But the more immediate loss to the public is from the dishonest quality of goods inseparable from prices too far reduced.

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As already pointed out, prices will take care of themselves while on the downward road, but how to put them up, when such a course seems desirable, is a very serious question. Every manufacturer knows the fallacy of the popular idea of the profits in this field, and of the other idea, that no sane man would run a factory at a loss. To begin with, a factory may long be run at a loss without the owner's knowledge; or it may be with his knowledge, but in spite of himself, because a factory cannot be closed and its force of skilled workers scattered whenever there is a falling-off in profits.

One thing which experience has proved is that volume of trade is not necessarily a measure of profits. It is evident that the mechanical rubber-goods trade in America for some time past has been in large volume. There has been an increase in different lines of manufacturing which involve a demand for rubber goods; the revival of buying by the railroad companies has applied to rubber goods as well as to other materials; and the dry season just closed has been exceptionally favorable to the hose trade. Consequently the factories have been busy, and some of them have had to be enlarged, but the prices prevailing date from a period when the chief materials used cost less than they do to day. There is no sliding scale of prices for mechanical goods to fit the fluctuations in cotton duck, for instance.

Another thing which has been learned is that the volume of sales is not controlled by prices. Every indication points to the sale of more rubber boots and shoes since April 1, 1895, than in the same months of any preceding year, although prices of such goods have been materially advanced over those of a few years ago—at a period when production in many industries reached its zenith. The fact indicated is that the consumer is less concerned whether he pays five cents more or less for a pair of rubbers than whether he is paying more than somebody else for a similar article, on the principle that a man who is throwing away dollars may object strenuously to being cheated out of a dime. The present condition of the rubber-shoe business has been reached through such concerted action as permits a certain scale of prices and certain selling conditions to be enforced, and dealers, convinced of this fact, have given their attention rather to the disposition of as many goods as possible than to looking about to see what competitor may be getting shoes for a little less money.

Here may be considered the difference between the present success of the rubber-shoe trade in maintaining prices and the failure, in this direction, of the former "selling agreements" among the manufacturers. The reason is plain. Under the selling agreements which, beginning in 1852, were constantly being broken and restored during forty years, the parties were not on an equal footing as to strength. While one concern might be strong enough to forego making any sales for a whole season, rather than sell a case of shoes under the agreement prices, another might be so pressed for money as not to be able to resist the lowest offer that happened to be made. The weak point in the old selling agreements was that no provision was made for the help of the weaker concerns by the stronger, although the true *raison d'etre* of the agreement was that the stronger should be protected from reckless competition by the weaker. The existing situation in the trade differs from the former in that the interests of the different companies have been made one, with no weak link in the chain to constantly menace the whole selling arrangement.

It does not follow that consolidation should be adopted in every industry. But the success of the United States Rubber Co. may serve to direct renewed attention to the price problem, some features of which need to be much more clearly defined in the public mind. Thus it is often overlooked that it is no more essential, to honest trading, that the buyer get the worth of his money than that the seller get the value of his goods. It takes two to make a contract, and, unless both are benefited, the transaction is opposed to public policy. If it be a matter of simple honesty, then, that a manufacturer should get what his products are worth, why should it be wrong to take measures to assure this? But concerted action with such an end need not involve speculative trading in company securities,—such as are 90 per cent. of the transactions on the New York Stock Exchange,—victimizing buyers through either false statements or the concealment of facts, and looking to Wall street for profits rather than to the making and selling of goods. It is this indefensible feature of the consolidation of capital which has brought about that public sentiment toward the very term "corporation" which prevents such a man as Chauncey Depew from trying to realize his aspirations for the presidency simply because he happens to be a railroad official.

There is in the town of Portland, Maine, an association of shoe dealers who have lately paid for the insertion in the local newspapers of a statement of the reasons for the advance in the prices of footwear—leather and rubber—and warning the public that goods bought now at the old prices must necessarily be of inferior quality. No doubt these dealers will be enabled thereby the more easily to continue the sale of standard goods at a profit, despite the advanced prices. This is mentioned simply as one method for getting higher prices for goods when there is reason for them to be higher. There must be other methods, but they will all involve coöperation, either of manufacturers or of merchants.

THE "WALDORF" LADIES' MACKINTOSH.

IT is a matter for regret that no illustration of this exceedingly beautiful ladies' garment is available. The reason that the manufacturers give for not preparing an illustration is that an engraver cannot do it justice, and, when one sees the garment, there is a great deal in the plea. The garment is made either single or double caped, usually in blue, brown, or black, and is silk lined. The point of special excellence about it is the exceedingly modest, yet rich, trimming effect that is gotten with the simplest of materials; in fact, the same material of which the garment is made. The fact is that the garment cannot be described by picture and do it justice. The manufacturers are the Apsley Rubber Co., Hudson, Mass.

THE FUTURE SUPPLY OF INDIA-RUBBER.

*An English View of the Situation.**

SOME twenty years ago sinister rumors as to the depletion of the rubber forests of South America caused a new departure in economic botany, namely, the systematic planting of rubber trees, and the results may be considered satisfactory as far as the possibilities are concerned, although the garden product, as we may term it, has not yet entered into serious competition with that from untended nature. The question now arises as to whether all the time and trouble has been expended needlessly or not. From what has appeared recently in the American technical press, this would appear to be the case, and it seems of some interest to briefly recapitulate those criticisms on what is almost entirely an English enterprise. Attention is drawn to the fact that vast forests of rubber trees exist untapped, and that any fear of curtailment of supply is illusory. This statement is supported by the fact that the market price of rubber remains practically stationary, while the demand has largely increased of recent years. A critic remarks that there is no good in doing what nature has already done so well for us; and another practical man, when asked why he did not support the rubber plantations, made answer by the query, "Why do I not go in for the cultivation of coal?" These and similar remarks go to show that in America there is no fear as to the supply running out, and that, therefore, any precautionary measures which prudence might dictate are unnecessary and uncalled for. The American business man cannot see any pressing need for the movement under consideration, and he is unwilling to embark his capital in an affair the benefits of which, to him at any rate, are so problematical. With regard to this point of unlimited supply, it may be noted that recent travelers in the upper parts of Brazil report that there is a large unworked area of rubber forests in the watershed of the Orinoco, and even where the forests are worked it is only in rare instances that more than the borders of the stream have been tapped, no trouble being taken to get spoil from the higher regions. Further than this there is a constant succession of trees arising from seeds. Count de Berthier has expressed the opinion that the Venezuelan forests could be made to yield 1000 tons of the best rubber per annum if carefully worked, and he is supported in his optimistic tone by what the Baron de Marajó has written in a recent number of the New York INDIA RUBBER WORLD. In Africa, although the supply is abundant, the want of navigable rivers has acted prejudicially against the due expansion of the trade, as under the conditions of porterage at present obtaining in many localities the natives find it unprofitable to carry rubber any distance to the coast when the item of paying tribute to the various tribes encountered *en route* has to figure in the profit and loss account. While on this matter of Africa's addition to our supply, we should like to take the opportunity of referring to the statement of M. Chapel that if the African rubbers were collected and prepared for market by the more enlightened methods in vogue in South America, the resulting product would be equal to the best Pará rubber. We confess to a mild feeling of surprise at this statement, and consider it a bold assertion which is not supported by the facts of the case, though, as it must be remembered that some kinds of African rubber are much superior to others, the author quoted may have had in his mind the best of the African sorts. As regards the bulk of the rubber, that from the *Landolphias*, or the species of *Ficus* found on the west coast, we think the day is very far distant which will see them improved to the standard of Pará rubber, though we certainly do not doubt that some amount of improvement is possible, and indeed, to our own knowledge, this has been effected of recent years in the case of the Lagos rubber, which, though at first practically worthless, now fetches a fair price in the market. However, we are rather wandering away from the lines of this article, and to return to the critics of the rubber plantations, it may be noted that they prognosticate great difficulty in obtaining labor if the plantations are carried out on anything like a large scale. The Indians, it is asserted, will not change the whole course of their lives and submit to the entire revolution of their methods of work, while it has been amply demonstrated that Europeans or Asiatics are incapable of sustained work in the climate. Other objections have been urged, but in face of the chief one, viz., unlimited supply, there seems but little use drawing attention to them. The case then seems a tolerably clear one for those who argue that rubber plantations are not warranted by the facts of the case. In passing judgment, however, on those who, in the light of recent discoveries, may seem to have acted somewhat precipitately, and without the exercise of due foresight, we should, of course, bear in mind that the common facts of to-day were not the common facts of 10 or 20 years ago. The discovery of these rubber forests is of recent date, and it cannot, therefore, be pointed at as an overlooked factor in the original consideration of the matter. It will be remembered by those interested that the representations made to our Kew authorities as to the depletion of the rubber forests, were couched in distinctly alarmist language, and therefore they quite merited the measures taken by the India Office. Of course it was possible for our government to have undertaken such explorations as have recently been made by private individuals, and this would probably have resulted in the alarmist rumors being somewhat discounted, as we may presume that the forests of to-day existed in much the same condition 20 or 30 years ago. However, it is easy to be wise after the event, and we shall certainly not be found in the ranks of those who seek to throw ridicule on the whole movement, because, whether the expense and trouble which our Kew authorities have been put to seem warranted or not at the present time, it has certainly

* From London *Engineering*.

been shown that rubber trees can be successfully acclimatized and grown in India and other districts far remote from their original habitat, and occasion may yet arise when the information thus gained may prove of much value to the India-rubber industry.

* * *

COMMENT BY AN AMERICAN IMPORTER.

A GENTLEMAN thoroughly familiar with the conditions of trade and industry in Central and South America entertained somewhat different views from the above. "While," said he, "it is true that not much capital, American or foreign, is invested in rubber plantations, the question is certainly in the air, and before long the vague notions and ideas on the subject will assume practical shape. The rubber countries are poor and naturally anxious to attract capital from outside to develop their industries and resources. On the other hand, it is beginning to be felt that some measures have to be taken to insure the future supply of the ever-increasing demand for rubber. As population grows, and as new applications or extensions of old applications of rubber in industry, are made, the demand for rubber increases, and it is a short-sighted policy to depend on existing rubber forests, which surely cannot last forever and access to which must become more and more difficult and expensive. Not only will rubber plantations be needed, but there will be more profit in them than in going to the inaccessible forests for the supply. The business world is not entirely ripe for it, but the subject is in the air, and you may expect to see the starting of a great many enterprises in that direction before many years go by. It is, however, to American capital that we have to look for this. Foreign capital will not go into anything the price of which is controlled by this country. We consume two-thirds of the rubber product of the world, and hence control prices. In twenty years our consumption has risen from less than ten millions to not far from forty millions. The rubber countries look to us for capital. The natives in South and Central America have already begun the planting of rubber trees, and a traveler will meet here and there plantations of considerable importance. But American capital will do the real work when the time is ripe. There is, however, one serious drawback,—the lack of labor. There is no civilized population in the rubber districts, and the Indians cannot be depended on for regular, systematic, and continuous application. They are not accustomed to order and discipline, and they will work in their own way, getting drunk or loafing whenever it suits them."

IMPORTANCE OF THE TRADE IN OLD RUBBER SHOES.

THE practical value to the world of modern scientific development has not been greater in the discovery of new forces and new materials of service to mankind than in bringing to light means for utilizing what formerly was pure waste. Science long has taught us that matter cannot be destroyed; it is now teaching us that no matter need be wasted. Inspired by this truth, the authorities in our leading cities to-day are seeking methods for so disposing of garbage that every ounce of it shall be commercially valuable, and doubtless we shall soon wonder that a golden stream was so long allowed to flow into the sea through the garbage-dumps. When the city wastes are thoroughly utilized, an item well worth considering will be found in the cast-off rubber shoes, of which not a few are already collected by scavengers in New York, going to swell the great quantities gathered elsewhere in the country for the rubber-reclaiming industry.

By the way, few outsiders know how extensive is the work of reclaiming rubber from waste, or how important the industry has become in recent years. How much of this new manufacturing material is used in the United States to-day is nowhere accurately recorded, but from figures to which the writer has had access, in the books of important concerns, with estimates of the business of other concerns, the inference would not be a bold one that the amount of reclaimed rubber used annually equals, pound for pound, our importations of crude India-rubber.

"How can that be?" a manufacturer was asked. "If all the rubber goods made this year were to be thrown away the next, you wouldn't be able to collect all the waste, nor yet to recover all the rubber in what was collected. Certainly there would be some loss; how, then, can the product of reclaimed rubber equal the amount used of new rubber?"

"There's no difficulty about that," he replied. "In the goods manufactured this year there is so much crude rubber and so much reclaimed rubber, the total being double the amount of new rubber annually brought into the country. In the waste which comes to us next year—even if we don't collect all the cast-off rubber goods in the country—there will be enough rubber, new and old, to yield the large proportion of recovered rubber that we claim. Both old and new rubber goes into our product, which is as truly rubber as a cargo fresh from the Amazon."

But it is not merely the amount of reclaimed rubber used that is of interest; the influence of its use upon the whole India-rubber industry, as expressed by the leaders in the reclaimed-rubber trade, is equally so.

"Reclaimed rubber, by the way, is not an adulterant," said a manufacturer of the article; "nor yet is it a substitute for crude rubber. It is simply cheaper rubber, equal to the crude product for some purposes and even better for others, and its discovery has played an important part in the upbuilding of the India-rubber industry in America. Look, if you please, at the figures showing our annual importations of crude rubber. Within ten years they have doubled, and these ten years have been the period of the largest development of the reclaimed-rubber industry. Europe, ten years ago, was consuming more Pará rubber than the United States, while to-day we are largely in the lead. But Europe has not adopted so fully as we have the use of reclaimed rubber, and consequently her indus-

tries have not had the same benefit from this source. I believe that the discovery of means for reclaiming rubber has done more than any other one thing—the discovery of vulcanization excepted—to develop rubber-manufacture. It has enabled manufacturers to produce goods at a lower cost without lowering their quality, which fact alone has largely extended the use of articles of rubber, thus increasing the demand for crude rubber. Reclaimed rubber does not displace the crude gum in the market; on the other hand, there is room for both kinds of rubber in the same article of manufacture, the reclaimed rubber taking the place often of whiting or barytes or other materials formerly used to give body to the product, with the effect of adding undesirable weight and perhaps deficient wearing qualities. But neither of these objections attends the use of reclaimed rubber. It cannot be kept too clearly in mind that the reclaimed-rubber market is entirely distinct from and unconnected with that for crude gum, and that the price of one is in no manner affected by that of the other."

The business of gathering waste rubber is chiefly confined, so far, to cast-off footwear. The methods of reclaiming rubber were first applied to scrap of this class, and the organized channels through which 18,000 tons of scrap annually trickle from the hands of country peddlers into larger streams, until the rubber-reclaiming factories receive it in carload lots, have all been planned for the collection of old shoes. The price of old shoes at the point where they first become a merchantable commodity it would be hard to say. In many rural districts rubber shoes are collected in the spring months, together with rags and other waste, by peripatetic merchants whose stock in trade, whether in a pack or a little wagon, consists of tinware and cheap trinkets, intended for exchange at the farm-house for the contents of the scrap-bag. No cash changes hands in these transactions. When the peddler returns to his starting-point he turns over his collections to the village merchant for more tinware, with perhaps a little cash, and goes out over a new route in quest of rags. The pedler may be in business on his own account, or in the employment of the village trader, but in either case the latter has a chance to make a profit on the collections of scrap, which are shipped from time to time to a city dealer. The latter will offer his rubber stock, whenever it reaches good proportions, to a rubber-reclaiming mill. In shipments from the west probably 5 per cent. of the whole will consist of rubber scrap, 25 per cent. of metal, and the rest of paper stock and rags. There is no one handling rubber shoes alone, however. Whoever buys the country merchant's collections must take the whole lot. But the rubber is the most prized part, in proportion to its extent, since the trade in rags for paper stock has been greatly depressed in recent years, while rubber scrap has gone upward in price, with the increased number of rubber-reclaiming factories and the consequent competition in the business. It may be noted that, when old shoes first became a merchantable article, the price paid for them by manufacturers was 1 cent per pound, while the quotations have since averaged 5 cents per pound for months at a time. The following table shows the average price of rubber scrap (old shoes) for several years past, with the range between highest and lowest prices per pound in each year:

YEAR.	Highest.	Lowest.	Average.
In 1887	5½	4½	5
In 1888	5¼	4½	4¾
In 1889	4¼	3¾	4
In 1890	4¼	3¾	4
In 1891	4¼	3	3⅝
In 1892	3⅛	2⅝	3
In 1893	5⅛	3⅛	4
In 1894	6	4	5

At the outset the trade in rubber shoes was totally without regulations, but at the beginning of 1889 the form of agreement of which a copy follows was signed by the leading operators in the trade, and its terms have since been adhered to.

January 1, 1889.

The undersigned, consumers of, and dealers in, old rubber boots and shoes, which articles have not hitherto had a regular merchantable standard, believing it to be for the interest of the trade in general, agree to adopt the following rules in regard to the packing and handling of old rubber:

Old rubber boots and shoes must consist only of old rubber boots and shoes, and not those known as arctics, which are only in part rubber, unless the cloth, rivets, and buckles have been cut from the same.

Old rubber boots and shoes must be cleaned from leather soles and iron nails, and must also be free from dirt.

Arctics are to be paid for at half price, unless cut as stated above. Boots with leather soles or iron nails are to be paid for at half price.

Hose, belting, packing, mats, spittoons, clothing, etc., will not be accepted in a delivery of old rubber boots and shoes, at any price.

Car-springs, wringer-rolls, valves, hose, etc., will only be purchased upon special agreement.

The necessary bagging to cover bales or bags containing rubber must not exceed 2 per cent. in weight, and consist of good merchantable gunny bagging. All other materials used to cover the rubber will be weighed out as tare. Iron wire or bands used in baling will be weighed out as tare and deducted from invoice.

The trade in rubber scrap is now most thoroughly organized in the west and northwest. In the southern states, where little snow falls, the consumption of rubber shoes is not sufficient to form a basis for a trade in old shoes. Even in New York city the use of rubbers is not large enough, in proportion to the population, to make the trade in scrap of importance. The rubber-reclaiming works formerly received considerable shipments from Canada, but that was before the establishment of factories in the Dominion for working up old shoes. Of the rubber scrap imported the larger share comes from Russia. The imported scrap is not so desirable, however, as what is gathered at home. In spite of the good consumption of rubber footwear in New England, there are no dealers in scrap there in a position of commanding importance. This is due in part to the existence of near-by factories which buy directly from the smaller dealers. In the west, the principal center of the trade is Chicago. Some of the leading dealers in old shoes are B. Loewenthal, Bros. & Co., of Chicago; Oppenheimer, Hofeller & Co. and D. Ullman Sons, of Buffalo; L. Arnstein & Co. and Stone Bros.,

Cleveland; A. Simon & Co., and American Paper Co., Detroit; R. Loewenthal, of Milwaukee; and Levi Hey, of Rochester. The relative importance of the trade in these towns is probably indicated correctly by the order of their arrangement above. The trade in the far west, extending to the Pacific coast, is tributary to Chicago.

INDICATIONS IN THE BICYCLE-TIRE TRADE.

THE opening of the bicycle season of 1896—and the consequent activity of the tire-manufacturers—will not be postponed, as was the case one year ago, for the great bicycle-shows. From present indications the shows, both at Chicago and at New York, will be as fully representative of the bicycle and tire trades as those of last winter. "We will *have* to show our lines there," said one rubber-man, in none too willing a manner, and doubtless his feeling in the matter is shared by many others. But already the air is full of talk about styles of tires, and prices, and, what is more to the point, of contracts signed—the latter in such numbers as to indicate not only that the output of wheels is to be large, but that preparations are being made for the early buyer.

The bicycle industry is unique in that, while every manufacturer in the country has evidently exerted himself this year to make as many wheels as possible, there has been no over-production. How they must be envied by manufacturers in other lines! Of course there are unsold wheels of the 1895 crop in somebody's hands, but the bicycle-makers haven't got them. What is more, every factory in the business is planning to turn out a greater number of wheels in 1896. Somewhere the limit is certain to be reached, however. Already warnings of "over-production" next season are to be heard, just as was the case one year ago. But the season just past saw at least twice as many wheels made as in 1894, and yet everywhere the complaint was that orders couldn't be filled on time. Speaking of unfilled orders, Alexander Holroyd, superintendent of the American Dunlop Tire Co. (New York), said to THE INDIA RUBBER WORLD:

"The number of unfilled orders for bicycles this year wasn't as great as one might imagine from all the talk on the subject. You see, it was this way: At a time when all the factories were rushed, some dealer would want a hundred wheels in a hurry, and would go to Pope, let us say, only to be told that he would have to wait his turn. Not satisfied with that, he would go to the 'Victor' people, and then to somebody else, probably getting in the end what he wanted—a hundred wheels for early delivery. But all the manufacturers who were approached with the order and declined it counted it as an order that they couldn't fill, so that a hundred wheels which somebody did make stand for maybe for 500 or 1000 wheels which couldn't be made because of the rushed condition of the factories."

One limit to the production of bicycles, in the opinion of a large manufacturer, is likely to be found in the matter of tubing, which is produced by only a few factories, while the nature of the industry is such that it cannot, for the present, at least, grow rapidly. Only last month a scare was started over a "tubing famine" said to be imminent in England, through American purchases in that direction, but it proved unfounded. Still a large production of wheels is assured, and the more the merrier for the tire-makers, who manufacture chiefly on orders. Manager Frank N. White, of the New York Tire Co., is figuring on an increase in the number of bicycles over the past season of 33⅓ per cent., though his estimate of the number actually manufactured in 1895 is reserved for private use.

* * *

A QUESTION which has been uppermost in the minds of bicycle-makers and rubber-men alike relates to the proper size of the tires. As already pointed out in THE INDIA RUBBER WORLD, the constant clamor for lighter wheels has led to a reduction of weight, and particularly of strength, in many cases to such an extent as to force a halt. Among other features the tires have also been lightened, and in two ways: by a reduction of diameter and by lightening the material of which they are made. Practically speaking, a tire cannot be made too light for racing, and the racing tires seem to have been taken as a desirable model for all cycling by many wheelmen, and the manufacturers have had to meet the demand. Smaller diameters of the tires make possible a reduction in the weight of the metal parts of the machines, for instance, by lessening the necessary width of the fork and other portions of the frame.

But the light tires of the past season lacked wearing qualities, and this through no fault of the rubber-men, and the veriest novice on the wheel soon learns that air in a pneumatic tire without wearing qualities is no better for cycling purposes than the air that blows through his whiskers. It was no more than was to be expected, therefore, that an INDIA RUBBER WORLD man who lately interviewed the leading rubber-tire makers, found a general tendency already in progress toward heavier tires, in order to give the necessary service, and larger diameters, to supply the requisite cushion of air.

Just how large a tire should be cannot be stated arbitrarily. It isn't a matter of taste. But experience seems to lead to a general consensus of opinion that 1⅝ inch tires are the most desirable for general use, with not a few riders favoring 1¾ inches. This is an advance from 1½ and 1⅝ inches—the diameters which have prevailed during the past season. It is plain enough that a pneumatic tire may be made so small in diameter as to afford no more of an air-cushion than the old so-called "cushion" tires. As increased resiliency follows an increased diameter, there are yet a few people in the trade who think that a tire cannot be too large, on the idea that the more of a good thing the better. One manufacturer who was seen would prefer 2-inch tires, while another insisted that a tire of such dimensions would "pull hard" on ordinary roads. The latter, however, is supplying 2-inch tires for the trade

in sections where the roads are very sandy, as in parts of Florida.

While some rubber-manufacturers have been content to make tires of any and all dimensions demanded by the bicycle trade, without taking any position in the matter of their own, at least one important maker has taken the position from the outset that $1\frac{5}{8}$ inches is the most satisfactory diameter, and has endeavored to bring his customers to his way of thinking. He claims that a greater amount of cushion is not necessary, while larger tires would give an unattractive appearance to the wheel and add to its weight and cost. In this connection may be given some figures to show how rapidly the contents of a pneumatic tire increase with every additional eighth-inch of diameter:

Diameter. Inches.	Circumference. Inches.	Area of Section. Sq. Inches.	Volume of Air per Foot Length. Cu. In.
$1\frac{1}{2}$	4.71239	1.7671	21.2052
$1\frac{5}{8}$	5.10509	2.0739	24.8868
$1\frac{3}{4}$	5.49779	2.4053	28.8636
$1\frac{7}{8}$	5.89049	2.7612	33.1344
2	6.28319	3.1416	37.6992

From this table it will be seen that a tire of $1\frac{3}{4}$ inches diameter will contain one-third more air to one foot of length than a tire of only $1\frac{1}{2}$ inches diameter. By the way, it is asserted by a manufacturer with whom an INDIA RUBBER WORLD man talked that many tires have been put out with diameters smaller than the advertised dimensions, in the effort to lighten the wheels in every possible way, and in the belief, on the part of bicycle-manufacturers, that the unaided eye would never detect the difference between a $1\frac{1}{2}$-inch tire and one of only $1\frac{3}{8}$ inches.

It is almost needless to say that the India-rubber trade will not regret a return to stronger tires. Said one of the number: "The rubber-men have gone on making tires to order, and have suffered in many instances in the reputation of their goods. In the reckless competition for light wheels the bicycle-manufacturer has reduced the weight of his tires after he has taken off every ounce he dares from the other portions of the bicycle, feeling that should the light tires fail to give satisfaction, he would be free from blame. He would only have to refer his customers to the rubber-manufacturer, who, in the end, bore not only the cost of replacing many tires, but also gained the name of putting a bad article of tires on the trade."

Some expressions from tire-manufacturers may thus be summarized: "We are satisfied that our tires have been too light, and we shall add a half-pound each to all our tires for the 1896 trade, except racers."——"We have always been opposed to the extra light tires, and our standard goods have always been kept up to what we regard as a suitable weight. We shall not need, therefore, to make any change now."——"We expect to put in more rubber this year—possibly as much as a pound more—but without greatly increasing the weight of the tires, as we can reduce the weight of the fabric used."——"We can make lighter tires than other firms on account of the excellence of our fabric. It will not be necessary to increase the weight of our goods." But while a great variety of expressions may be heard as to details, it may be stated that the standard 1896 tires will be larger in diameter than for the past two or three years.

From one standpoint some of the rubber-manufacturers will not welcome larger diameters in tires, or heavier weights. In the press of competition for lighter bicycles and cheaper bicycle-materials, the prices of tires were reduced to the same extent that their size and weight were reduced. Now that the bicycle trade is demanding a return to the old weights and sizes, it is not probable that the rubber-men will find the rule about prices one that will work both ways. In other words, the tire with more rubber in it will not bring any more money to the rubber-man.

TRAVELS OF AN AMERICAN IN AFRICA.

AFRICA so long remained an unknown continent, and is still a land of so many wonders, that almost every explorer who has lived to tell the story of his experiences there has been impelled to do so in a book. Thanks to this tendency, we now know a great deal about what is yet a "dark continent," but whoever has sought much accurate information concerning Africa as a whole has been obliged to consult a great many books, from different pens, from different standpoints which too often were contradictory, and not always up to date. There has come to be a need for a single work treating of the African continent as it is to-day, viewed by a competent observer, and in order to supply this want Mr. Frank Vincent, already widely known as a traveler skilled in telling people at home what he has seen abroad, has written a book lately issued from the press.* It is not as a searcher for new rivers or tribes or products that our author has become a traveler, nor yet as a promoter of political or commercial enterprise. But, going out equipped with funds enough to pay his way, followed leisurely around the continent, with incursions into the interior wherever it suited his fancy, he has chosen the best means of travel, enjoyed the best native or imported accommodations, and sought to learn what is the real life in Africa to-day with respect to which the invading nations will soonest have to deal. Mr. Vincent did happen to become the first white navigator of more than one stream, but what he deemed of greater importance was to study the best means of travel on the principal streams already known, and their present and prospective commercial potentiality.

The task here outlined is by no means slight, especially if it be remembered that Africa contains one-fourth of the land of the globe, or about as much as all the Americas combined. Its population, too, about equals that of the western hemisphere. To continue this recital, the natural

* *Actual Africa; or The Coming Continent.* A Tour of Observation. By Frank Vincent. With Map and over One Hundred Illustrations. New York: D. Appleton & Co., 1895. [Cloth. 8vo. 541 p. Price, $5.]

advantages and early possibilities of Africa are such that, of every twelve square miles on the continent, eleven have been appropriated by European powers. The latter are, in every case, seeking strenuously and, as Mr. Vincent claims, with considerable success to develop the resources of forest, soil, or mine. The study of this great country occupied our author for more than two years. As for the distance traveled by him, the length of the coastline of the continent—16,000 miles—did not cover the half of it; for instance, he sailed out to Mauritius and crossed the island of Madagascar, after having traveled overland across the north of Africa and made an excursion up the Nile, while later he ascended to the headwaters of the Congo, spending six months in the watershed of that river.

The effect of this book will be to impress the reader favorably with the possibilities of development under European auspices. To begin with, its general testimony is to the salubrity of the climate, except along the coasts in the tropical zone. The author, while working from an independent standpoint, seems to have reached the opinion expressed by Mr. Stanley and Sir John Kirk, at the late International Geographical Congress, that, while the west coast has proved deadly to Europeans, the table-lands of the interior are fitted for their habitation. A second point is with regard to the productiveness of the soils, which yield readily a profusion of fruits, vegetables, and grains, by reason of which Europeans going to Africa to live could soon obtain for their tables a great proportion of their accustomed articles of diet. This has been pointed out by Professor Shaler as having tended greatly toward the success of European colonization in North America, and there is no reason why the same consideration should not have weight as to Central Africa. Nowhere in his African travels did our author suffer for food; going up the Congo, he mentions that good fowls were to be had, and at the farthest point reached by steam on the Kassai he found behind the houses "a good garden full of tomatoes, beans, peas, cabbages, radishes, and salad." And so in north Africa, including Egypt, whose irrigated fields are as fertile as in the palmiest days of the past. But not only are the soil and the climate propitious for agriculture—which must precede success in coffee-planting and rubber-gathering—but the natives can readily be trained in the agricultural arts, if they should be found lacking in that particular.

The question of the native labor will prove in time to be of first importance with regard to the civilization of Africa. The aborigines of both North America and South America were averse to labor on European models, and as one result the red man has well-nigh disappeared from the United States, with a similar fate awaiting the Indians of the Amazon valley. What one type of African—the negro—is capable of becoming as a laborer we all know, and the race is one which persists under adverse circumstances, instead of withering away. But the negro does not comprise the chief factor in the population of Africa. More important are some of the dark denizens of Congoland, who are not negroes, however, but are described as the Bantu tribes. One of the finest of these tribes, writes Mr. Vincent, are the Balolos, of whom there are supposed to be five millions living in a territory five times as large as England, south of the middle third of the Congo river. The Balolos are experts in the making and smelting of iron and brass, producing—in their native state, be it noticed—axes, hoes, spades, plows, knives, and other useful implements, besides such ornaments as bracelets, necklaces, and anklets. They are industrious and understand division of labor, as between farmers, blacksmiths, boatbuilders, weavers, warriors, etc. They are powerfully and finely developed, with high foreheads, aquiline noses, comparatively delicate lips, and a general expression both animated and intelligent. They are better dressed than the natives nearer the coast, and have better houses. Much more is said in this book about the Congo tribes upon whom must rest no small part of the subjugation of the interior of the continent in the cause of civilization. Besides the Balolos, the Bangalas receive prominent mention.

In the present notice of Mr. Vincent's work special attention will be given to the sections of the continent which yield India-rubber, and it may be of interest to note that already the Balolos and Bangalas are being utilized as rubber-gatherers on the Kassai and other affluents of the upper Congo which flow from the south, and their adaptation to the work has been satisfactorily proved. They are also serviceable for crews on the river steamers—a field of labor which will be vastly extended when the completion of the Congo railway around the rapids opens the whole interior of this great valley to commerce. It is said that formerly it took five years for an article of European manufacture to reach the upper Congo. Was it a matter for wonder, then, that commerce with the interior should have been of slow growth in the past? But conditions have improved every year since the first expedition of Stanley—who is awarded full credit in this book by the way—and when Stanley's dream of a Congo railway shall have been realized, the navigation of the great river from end to end will be a matter of only a few days.

India-rubber seems to have attracted Mr. Vincent's attention only slightly on the east coast of Africa, though he mentions it among the exports from Zanzibar and Mozambique. But all the way up the west coast it was different. At Ambriz and neighboring ports his steamer lay four days "engaged mostly in loading coffee and rubber"; at Cameroons they "passed the day in loading rubber and palm-oil"; and they were "three days at Old Calabar, loading palm-oil and rubber." At Benguela there are many European business houses, whose trade with the interior is very great. The natives carry India-rubber and other products to the coast in caravans, whom the traveler on the way to the interior met incessantly—long rows of men and women in single file, often two hundred in one party, with sixty-pound loads upon their heads, or with heavier burdens swung on a pole between the shoulders of two persons. Some of these caravans travel distances of several hundred miles, being months on the way. The governor of Benguela made particular mention of what we know as "Almeidina" or "potato" gum, extracted extensively from the roots of a small shrub growing spontaneously on the banks of certain rivers in the interior.

This had greatly increased the exports from the province.

On the Congo our traveler found India-rubber to be an object of interest second only to ivory, although the collection of rubber is a much newer business. At all the important stations along the Congo were gathered stocks of rubber for export, or warehouses of merchandise to be exchanged for rubber, since no money yet changes hands in the local commerce. There are great European trading companies with stations on the upper Congo and its branches, visited frequently by steamers. Prominent mention is made of the Société Anonyme Belge pour le Commerce du Haut Congo (The Belgian Commercial Company of the Upper Congo, Limited), who have a capital of 5,000,000 francs, with fifty or more stations. They are one of the oldest companies on the Congo, and are interested in India rubber and coffee. The explorer found on the Sankuru the American superintendent of the company—Mr. Unckles—trying to make a better grade of rubber. The sap was boiled in iron pans and then made into great cakes for export, with better results, it was claimed, than when the rubber was rolled together in balls the size of small oranges, as practised by the natives, both on the Congo and in Angola.

To return from this disgression about rubber, Mr. Vincent's book will give a good idea of how the different African peoples actually live, whether in Tangier, on the Congo, or in the gold-mining country; what business is really in progress: how travel and transportation are effected; and many items of cost. But those who care less about these purely practical details will find interesting descriptive passages and incidents of travel, recorded by one of the most extensive travelers of our day. The work is, on the whole, a most satisfactory contribution to our knowledge of Africa, even to those who have followed the works of the earlier explorers. We have here a record of the progress made by the Europeans in that continent since the beginning of Stanley and his contemporaries in exploration. It is worthy of special mention that, Mr. Vincent having been provided with a camera and the ability to use it, his book has become the most satisfactorily illustrated work on Africa that has yet appeared.

HAWTHORNE HILL.

POWDERED ASBESTOS OR SOAPSTONE IN RUBBER COMPOUNDS.

"ONE good secret is worth a dozen patents" is a common saying in this country, and this, too, in spite of the difficulty experienced in keeping secrets. The reason for this general belief is the feeling that almost anything is patentable, and, further, that a good patent does not give any special protection. It is refreshing in the face of this general doubt to read of a recent decision of Patent Commissioner Seymour in the case of Pratt and Johns *v.* Thomson. It seems that on October 6, 1891, a patent was granted to Elihu Thomson for an insulating composition compound of asbestos-fiber, soapstone, and rubber, which, it was claimed, interfered with a patent granted June 2, 1887, to Rufus N. Pratt and Henry W. Johns, covering the well-known vulcabeston compounds, owned by the Johns-Pratt Co., of Hartford, Conn. The case was brought before the examiners-in-chief who awarded priority of invention to Pratt and Johns. An appeal was taken from this ruling and the matter brought before Commissioner Seymour, who reviewed the briefs and rendered his decision. He says, in substance:

Henry W. Johns was the first in this country to introduce asbestos for practical purposes, and, prior to 1886, had invented and manufactured materials composed in part or wholly of asbestos for a variety of purposes. Rufus N. Pratt used asbestos under a patent to John Dewrance, of England, had applied it to other uses than Dewrance contemplated, and applied for a process patent which was issued March 23, 1886. That process differs from that which was contemplated by these parties in that the latter is a dry process, requiring a lubricant to assist in molding, whereas the earlier processes, employing rubber dissolved in naphtha, did not require a lubricant. In October, 1886, the Johns-Pratt Co., of Hartford, began the manufacture of a composition of which the principal ingredients were long-fiber asbestos, rubber, and powdered asbestos. A given quantity of rubber was dissolved in naphtha. Into this was sifted long-fiber asbestos, then pulverized asbestos, and into this was mixed pulverized sulphur. This mass was molded by hand, evaporated, and then pressed into solidity. It was then ready for vulcanization in the usual way. The long-fiber asbestos gave strength, the rubber served as a binder, and the powdered asbestos served to fill out the mold. It is claimed by Pratt and Johns that soapstone was sometimes used in place of powdered asbestos prior to October, 1886; but on this point the proof is doubtful. The proportions of the ingredients varied according to the particular use for which the composition was intended. When used only for valve-packing, piston-packing, and the like, it was usually made up with plumbago, instead of powdered asbestos.

A compound of asbestos-fiber and rubber, vulcanized, and not containing any additional material, would form a substance which would make an efficient electrical insulator. With soapstone or plumbago added for any purpose a smaller amount of rubber might be used. As plumbago is not an insulator while soapstone is, one form of the material would be an insulator, while the other would not, but would be an excellent piston-packing. The material would be more compact and strong without the soapstone or plumbago than with it, if the necessary larger amount of rubber were used. A good quality of asbestos, whether in the ground or fibrous state, has a moderate degree of feel, and generally the better the asbestos the more smooth it is. Asbestos-fiber in compositions of this kind is hard to machine and injurious to tools. Soapstone is easier to machine. Asbestos is often associated with soapstone or talc-like minerals and may contain in the ground state more or less of these substances. The lubricant of this issue appears to have three functions: first, to produce a composition which for packing around moving parts should have a high degree of natural lubrication; second, to render the composition easily wrought upon with tools; and third, to aid in molding. Plumbago, talc, argillite, and soapstone were known to be natural lubricants at the earliest time mentioned in this case. On October, 26, 1886, the Waterhouse Electric Co., of Hartford, gave a sample order to the Johns-Pratt Co. for sheet-asbestos packing one-sixteenth of an inch thick, moderately hard, and to be a non-conductor, and this order was soon afterward filled and the

material was used for electrical insulation. Later many other orders were received from the same firm for articles intended for electrical insulation, and for molds in which to form them. During 1887 still other orders were received and filled from the Eddy Electric Co., the Edison Electrical Co. at Schenectady, and the Thomson-Houston Co., at Lynn, with the latter of which Thomson, the senior party in this case, was actively connected. The first orders from the Thomson-Houston Co. were received and filled in the early half of the year 1887. From that time onward until about July, 1893, the Johns-Pratt Co. sold the Thomson-Houston Co., or the General Electric Co., with which it became amalgamated, large amounts of this insulating composition, probably to the extent of $50,000 worth. It contained no plumbago and it does not appear that it contained any soapstone; but ground or powdered asbestos was the ingredient used as the filler.

The question is whether powdered asbestos is the equivalent of powdered soapstone within the meaning of this issue. Pratt and Johns treated powdered asbestos as a filler and made their much advertised composition of matter, which they called "vulcabeston," with this whenever it was ordered for electrical insulation. When they received orders from the Thomson-Houston Co., they made use of it for the same purpose, and when the Thomson-Houston Co. received the molded forms used as sockets in their incandescent lamps the composition was accepted with powdered asbestos as the ingredient, as if it answered every purpose of electrical insulation as well as long fiber asbestos, rubber, and soapstone would. As has been found from the expert testimony in this case, powdered asbestos is inherently a substance of some degree of natural lubrication for the purposes of aiding in the molding and for the purposes of facilitating machine-working upon the forms made from this substance. It exhibited a degree of lubrication sufficient to bring it within the issue.

It was found by the commissioner that there was no sufficient evidence to support the conclusion that the Thomson patent was inadvertently granted, little to show that the Pratt and Johns application was not before the examiner who passed the Thomson application to issue, or that it was not done upon full consideration. There was no sufficient evidence for the claim for Thomson that he communicated to Pratt and Johns or that they derived any information from Thomson, that led them to use any ingredient of this composition of matter for insulating purposes, or that they received any information from Thomson respecting this invention which deprived them of the merit of originality. It does not appear that any thought was bestowed upon this particular subject by Thomson before the Johns-Pratt Co. had received the order from the Waterhouse Electric Co. of October 25, 1886. The conclusion therefore is that in this electrical insulating composition ground asbestos is the equivalent of soapstone in the proportions named in Thomson's specification and in his patent and in Pratt and Johns application, original or amended, and in the composition as actually made by Pratt and Johns. It is considered, too, that the composition of matter is original with Pratt and Johns; that knowledge of none of its ingredients was acquired from Thomson by them prior to its manufacture by them; that there is no error in the decision of the examiners-in-chief in awarding priority to Pratt and Johns, and their decision is accordingly affirmed.

GOVERNMENT TESTS OF RUBBER SPRINGS.

SOME months ago a prominent mechanical engineer wrote THE INDIA RUBBER WORLD for figures on tests of rubber springs, if any such existed. We referred him to the Ordnance Reports of the United States, and, finding that others are interested in the matter, we give below the figures as they were taken down at the Arsenal, Watertown, Mass., where the experiments took place.

The first test was of an old rubber spring used on a gun carriage. It weighed 10 pounds, had a sectional area of 27.82 sq. inches, with a hole in the middle 1.35 inches in diameter.

No. 1.

Applied Loads.	Mean Length.	Compression.	Compression Sets.	Middle Diameter.
Pounds.	Inches.	Inches.	Inch.	
0	5.72	....	....	6.10
1,000	5.32	.40	0.	6.38
2,000	4.84	.88	.10	6.72
3,000	4.47	1.25	.18	7.06
4,000	4.03	1.69	.29	7.48
5,000	3.70	2.02	.33	7.79
6,000	3.40	2.32	.37	8.12
7,000	3.14	2.58	.42	8.44
8,000	2.96	2.76	.39*	8.73
9,000	2.80	2.92	.51	8.92
10,000	2.68	3.04	.58	9.11
11,000	2.60	3.12	.52*	9.24
12,000	2.50	3.22	.60	9.42
13,000	2.45	3.27	.67	9.55
14,000	2.36	3.36	.73	9.68
15,000	2.31	3.41	.74	9.77
0	5.15	....	....	6.71

* Before these sets were taken the load on the rubber was reduced to 500 pounds, then increased to 1,000 pounds, and the sets then measured.

The second test was of new rubber gun-carriage springs, in which the compression sets were determined under the initial load, the end diameters approximate under load. The length of the rubber spring was 6".03, the diameter 6".03, the diameter of core 1".04, the sectional area 27.71 square inches, and the weight 11 pounds.

No. 2.

Applied Loads.	Length.	Compression.	Compression Sets.	Diameters.		Middle dia. under initial load.
				End.	Middle.	
Pounds.	Inches.	Inches.	Inch.	Inch.	Inches.	Inches.
500	5.87	0.	0.	6.03	6.12	6.12
1,000	5.70	.17	.02	6.03	6.24	6.15
1,500	5.51	.36	.03	6.03	6.35	6.15
2,000	5.34	.53	.06	6.03	6.48	6.18
2,500	5.13	.74	.07	6.03	6.64	6.18
3,000	5.00	.87	.07	6.10	6.76	6.18
3,500	4.81	1.06	.09	6.15	6.87	6.18
4,000	4.65	1.22	.08	6.16	7.00	6.18
4,500	4.50	1.37	.08	6.18	7.15	6.19
5,000	4.35	1.52	.02	6.29	7.20	6.19
5,500	4.20	1.67	.12	6.38	7.41	6.19
6,000	4.06	1.81	.19	6.43	7.55	6.19
6,500	3.95	1.92	.03	6.50	7.66	6.21
7,000	3.83	2.04	.15	6.64	7.77	6.21
7,500	3.70	2.17	.15	6.70	7.91	6.22
8,000	3.62	2.25	.15	6.78	8.02	6.22
8,500	3.52	2.35	.16	6.89	8.13	6.22
9,000	3.43	2.44	.16	6.96	8.24	6.23
9,500	3.35	2.52	.17	7.06	8.34	6.24
10,000	3.25	2.62	.17	7.25	8.46	6.25

The spring was then removed from the testing-machine, measured and its length was 5".90, middle diameter 6".08. After it had rested 20 minutes the length was 6", the middle

diameter 6″.06. It was then placed again in the testing machine and the following figures taken :

No. 3.

Applied Loads	Length.	Compression.	Compression Sets.	Diameter.		Middle dia. under initial load.
				End.	Middle.	
Pounds.	Inches.	Inches.	Inch.	Inches.	Inches.	Inches.
500	5.84	.03	.03	6 01	6.15	6.15
6,000	4.00	1.87		6 55	7.63	
10,000	3.29	2.58		7.25	8.40	
10,500	3.21	2.66		7 35	8.48	
11,000	3.16	2.71		7 39	8.54	
11,500	3.11	2.76		7.46	8.60	
12,000	3.06	2.81	.17	7 55	8.67	6 26
13,000	2 94	2.93		7.74	8.86	
14,000	2.86	3.01		7.86	8.97	
15,000	2.80	3.07	.22	7.94	9.04	6.30
16,000	2.71	3.16		8.10	9.20	
17,000	2.65	3.22		8.20	9 28	
18 000	2.61	3.26		8.27	9.35	
19,000	2.56	3 31		8.36	9.42	
20,000	2.53	3 34	.30	8.43	9 47	6.37

When removed its measurements were, length 5″.86, middle diameter 6″.24, end diameter 5″.90, the ends were concave, V, sine ″.06 and ″.08. After 6 hours' rest it recovered in length to 5″.96.

In the next test the length of the spring was 6″.06, diameter 5″.97, diameter of core 1″.06, sectional area 27.11 sq. in., weight 11 pounds.

No. 4.

Applied Loads.	Length.	Compression.	Compression sets.	Diameter.		Middle dia. under initial load.
				End.	Middle.	
Pounds.	Inches	Inches.	Inch.	Inches.	Inches	Inches.
500	5.90	0.	0.	5.97	6.07	6.07
1,000	5.75	.15	.02	5.97	6.16	6 07
1,500	5.59	.31	.02	5.97	6.27	6.08
2,000	5.41	.49	.06	5 98	6.38	6 10
2,500	5.25	.65	.05	6.02	6.48	6.10
3,000	5.05	.85	.09	6.05	6 62	6.12
3,500	4.90	1.00	.08	6.08	6.73	6.11
4,000	4.76	1.14	.10	6.14	6 88	6.12
4,500	4 61	1.29	.10	6.20	7.00	6.12
5.000	4 47	1.43	.11	6.25	7 11	6 12
5,500	4.33	1.57	.11	6.31	7.24	6 14
6.000	4.21	1.69	.12	6.37	7.32	6 15

The measurements when removed from the testing machine were, length 5″.98, middle diameter 6″., and diameter 5″.97. After it had rested 15 hours it measured, length 6″.02, middle diameter 6″., and diameter 5″.96. It was then placed again in the machine and tests were resumed.

No. 5.

Applied Loads.	Length.	Compression.	Compression sets.	Diameters		Mid. diam. under initial load.
				End.	Middle.	
500	5.90	0.		5 97	6 08	6.08
6,000	4 27	1.63		6 35	7.30	
6,500	4 12	1 78	.08	6 38	7.41	6.11
7,000	4 00	1.90	.09	6 50	7.55	6.12
7,500	3 90	2 00	.10	6 57	7 62	6.14
8 000	3 82	2.08	.10	6.65	7.73	6.12
8,500	3.72	2.18	.11	6 75	7 82	6.14
9,000	3 62	2.28	.14	6.84	7.93	6.16
9,500	3 52	2.38	.14	6 93	8.03	6 17
10,000	3 45	2.45	.16	7 00	8 11	6 17

The spring was then removed from the testing machine and its measurements were, length, 5″.92, middle diameter, 6″.09. Measurements after the spring had rested 1 hour showed : length, 5″.98, middle diameter, 6″.06, end diameter, 5″.95. The spring was again placed in the machine and tests resumed.

No. 6.

Applied loads.	Length.	Compression.	Compression sets.	Diameter.		Mid. diam. under initial load.
				End.	Middle.	
Pounds.	Inches.	Inches.	Inch.	Inches.	Inches.	Inches.
500	5 88	.07	.07	5.97	6.13	6.13
6,000	4 09	1.81		6.41	7.47	
10,000	3 46	2.44		7.00	8 12	
10,500	3.38	2.52		7.09	8.22	
11,000	3 34	2.56		7.15	8 27	
11,500	3.27	2.63		7.21	8.36	
12,000	3.17	2 73	.22	7.26	8.40	6.22
13,000	3 10	2 80		7.46	8.57	
14,000	3 02	2.88		7.51	8.67	
15,000	2 90	3.00	.26	7.66	8.70	6.27
16,000	2.84	3.06		7.84	8.95	
17,000	2 79	3.11		7.90	9.02	
18,000	2.75	3.15		7.97	9 06	
19,000	2.70	3.20		8.05	9.13	
20,000	2.68	3.22	.37	8.11	9.19	6 36

Applied Loads.	Length.	Compression.	Applied Loads.	Length.	Compression.
Pounds.	Inches.	Inch.	Pounds	Inches.	Inch.
1,000	5.43	.47	11,000	3.05	2 85
2,000	5.10	.80	12,000	2.98	2.82
3,000	4 75	1.15	13,000	2.91	2.99
4,000	4 43	1.47	14,000	2 85	3.05
5,000	4.10	1 80	15,000	2.81	3 09
6,000	3 80	2.10	16,000	2.78	3.12
7,000	3.58	2.32	17,000	2.74	3.16
8,000	3.38	2 52	18,000	2.70	3 20
9,000	3 25	2.65	19,000	2 67	3.23
10,000	3.15	2.75	20,000	2 63	3.27

Time for loading, 3 minutes.

The spring was then removed from the testing machine and its measurements shown. Length, 5″.81 ; middle diameter, 6″.25; end diameter, 5″.87 ; ends concave V Sine, ″.08 and ″.10. It recovered in length to 5″.93 after four hours' rest.

FRENCH WOOL GREASE, LANOLINE, LANICHOL.

TO THE EDITOR OF THE INDIA RUBBER WORLD : In the July issue of THE INDIA RUBBER WORLD I have noticed an article on softening rubber tires by means of an admixture of Lanoline with rubber, also a report on its chemical nature from Percy Carter Bell, F. I. C., F. C. S. If, as is asserted, Lanoline is being mixed with rubber by manufacturers of tires, etc., I would like you to call their attention to the fact that I obtained a patent for the United States for the use of Lanichol which is a form of Lanoline as applied to rubber and Gutta-Percha but that I sold my right to the United Gutta Percha and Rubber Co., of Glasgow, Scotland, and that such use without license from them is an infringement. I may mention that no doubt they have found that it is entirely suitable for the purpose of softening rubber if mixed in suitable proportions, and is exactly what is required to soften and preserve the tire from decay and consequent cracking and disintegration. A suitable mixture of rubber and Lanoline vulcanizes well, and in addition to being suitable for tires is very advantageous for waterproofing, over-shoes, etc. ROBERT HUTCHINSON.

Springvale Mills, Cowlairs, Glasgow, Scotland, September 3, 1895.

PNEUMATIC tires on fashion's carriage-wheels may be classed among the nerve repairs of this nerve-destroying age. They are a blessed invention, from the standpoint of the street, and certainly of the occupant of the vehicle. Less noise and less jolt are conditions devoutly appreciated in badly-paved cities.

BRIEF ABSTRACTS OF RECENT RUBBER PATENTS.

AMONG recent patents issued by the United States Patent Office, embodying applications of India-rubber or Gutta-percha to a greater or less extent, have been the following. It is not practicable here to do more than to note the use of rubber in each case, with sufficient detail to enable those who are interested to decide whether or not to look into any particular patent more fully:

TIRES.

No. 543,862.—Wheel-Tire. Christian H. Gray, Silvertown, Eng.

In a wheel the combination with the rim of a flexible hollow tire formed of a folded strip or sheet and an unstretchable diaphragm secured to the tire near the tread surface and extended therefrom into operative connection with the rim, the unstretchable diaphragm being formed by adjacent folded portions of the tire.

No. 544,167.—Air-Valve. Frank Gustaveson, Wabasha, Minn.

An air valve, comprising a casing having outer and inner chambers connected by an air passage, a screw plug to close the outer chamber, a valve held in the inner chamber and adapted to seat itself over the air passage, a flexible sleeve secured to the casing and having a washer at its inner end adapted for attachment to a tire, the inner end of the casing projecting beyond the inner end of the flexible sleeve provided with side ports, and a cap covering the outer portion of the flexible sleeve, and a washer arranged between the outer end of the sleeve and the cap.

No. 544,189.—Means for Repairing Breaks in Pneumatic Tires. Frederick H. Nies, Brooklyn, N. Y.

A clamp for repairing a torn or punctured tire, comprising inner and outer arched sections, the inner section uniting the legs of the outer section to prevent spreading thereof, and the arched formation of the clamp sections, when applied, serving to maintain the clamped portion of the tire approximately in line with the outer peripheral surface of the inflated portion.

No. 544, 17.—Cushion-Tire for Vehicle-Wheels. Howard M. Du Bois, Philadelphia, Pa.

A vehicle wheel comprising a tapered rim, a tire having tapered flanges and an elastic cushion normally of greater width than the rim and of greater thickness than the space occupied by it between the tire and the rim, the tire having its flanges overlapping the sides of the rim and being compressed against the face and sides of the cushion and against the sides of the rim.

No. 544,237.—Elastic Tire for Vehicle Wheels. William J. Ryan and James A. Murphy, Holyoke, Mass., assignors of one-third to Charles H. Morgan, same place.

In a pneumatic tire for vehicle wheels, a tube of elastic rubber comprising internally between its lateral sides an attached wall or diaphragm of rubber between which and the tread part of the tube are included a series of elastic protuberances for holding the tread part of the tube distended from the diaphragm, the protuberances being as a unity of one of the last named parts, and a valved passage through which to inflate the portion of the tube within the diaphragm.

No. 544,688.—Frictional Surface for Cycle Wheels, &c. Anthony Pulbrook, London, England.

The process of coating the scaly side of fish skins for friction purposes, consisting in first soaking the skin in a solution of borax, then cleansing and drying the same, and finally coating it with a solution of Gutta-percha or the like.

No. 545,114.—Bicycle-Tire. Frederick White, Boston, Mass., assignor to Edward S. Beach, same place, and Emerson W. Law, Cambridge, Mass.

The combination of a troughed rim; a sheath formed with ribs along its exterior margins and flaps along its inner margins; a cross-wise divided hoop exterior to the rim and between the sides of which and the sides of the rim, the sheath ribs are confined; a pair of independent hoops bearing upon the inner surface of the sheath, and held by the flaps on the inner margin of the sheath.

No. 545,118.—Process of and Apparatus for Vulcanizing Air-Tubes for Pneumatic Tires. Ernest W. Young, Chicago, Ill., assignor to Morgan & Wright, same place.

The within described improvement in the process of producing inner elastic air-tubes for pneumatic tires, consisting in forming the tube of unvulcanized rubber; confining it within a chamber formed by the interior of a shell or casing; causing the confined tube to flatten of its own accord except along the resulting longitudinal edge portions thereof, and upholding the latter so as to allow them to assume and maintain a curved form in cross-section; and vulcanizing the tube thus arranged, so as to produce a normally flattened inner elastic air tube adapted for service in a pneumatic tire.

No. 545,148.—Tire for Velocipedes. Isaac Best, Lawrence, Mass.

A tire for velocipedes and other vehicles composed of independent sections of solid cork having ends divergingly cut to secure a circular form after assemblage, each of the sections provided within its longest periphery with a semi-circular groove adapted to receive and support a non-collapsing endless hollow tubing of rubber, in combination therewith the non-collapsing endless hollow tubing of rubber and the separable tubular outer covering of rubber adapted to be laced in position in a manner to maintain contact of the cork body and the hollow tubing.

No. 545,232.—Inflatable Puncture-Plug for Pneumatic Tires. Robert Johnston, Wilkes-Barre, Pa.

The method of patching hose or tires which consists in forcing an inflatable patch through the puncture while the patch is deflated, injecting cement upon the outer side of the patch, then inflating it and maintaining it in the inflated condition until the cement has set.

No. 545,280.—Elastic Tire for Vehicle Wheels. Patrick Fitzgerald, Springfield, Mass.

In a vehicle wheel, the combination with a rim, of a series of individual tire-supporting sections, each consisting of a thin metallic spring shell having a tread portion and separated tongues or prongs at the sides and base brought to approximately cylindrical form, the sections being secured to the rim at intervals, and the tire inclosing the sections and supported thereby.

No. 545,455.—Valve for Pneumatic Tires or other Articles. Clements Courtney, London, England.

The combination with a valve casing having an inner shoulder, of a valve stem, and a tube of rubber or other suitable material in the casing closing at one end by a plug adapted to seat again the shoulder, the plug and shoulder being arranged to permit the passage of fluid when the plug is seated, the tube being connected with the valve stem at its opposite end and having an incision or other suitable opening through its side.

No. 545,506.—Metallic Fastener for Pneumatic Tires. James L. Johnson, Fort Madison, Iowa.

A metallic fastening device for the outer case or cover of a pneumatic tire, made from a single sheet metal blank shaped to conform to the curvature of the exterior surface of the tire and comprising a longitudinally extending plate, two rows of oppositely disposed and inwardly converging pins or hooks projecting from the convex face thereof and formed integrally with the edges of the plate and adapted to engage eyelet holes in the

outer case or cover of the tire, and an integral loop at one end of the plate for embracing and supporting the valve, the whole device being formed of a single piece of metal and adapted to be applied to the exterior surface of the outer case or cover and between the latter and the wheel rim.

No. 545,547.—Tire for Vehicle-Wheels. William Stelfox, Manchester, England, and James W. O. Walker, Douglas Cairney, and William Purvis, Glasgow, Scotland.

In a pneumatic tire for wheels the combination with the fellies and hoop of an inner cover covering the fellies, a buffer projecting therefrom the external cover forming an air space between the two covers, a buffer projecting from the inner side of the cover, the rings by which the covers are secured to the wheels, and the protecting plates.

MECHANICAL GOODS.

No. 543,837.—Street-Car Bridge for Bridging over Firehose. William H. Baker, Detroit, Mich.

In a hose bridge, the combination of a central wheeled section, and two end sections hinged to the end of the central section and adapted to fold over upon the same and being tapered downward toward their outer ends, the adjacent ends of the sections being recessed to embrace the lines of hose.

No. 543,871.—Hose-Coupling. Leon J. Houze, Hartford City, Ind.

A hose coupler consisting of two metal tube parts one provided with a shoulder on the inside and its inner walls flaring outwardly from the shoulder, the other provided with a shoulder upon its outside periphery, and a portion beyond the shoulder chamfered inwardly, and also provided at the end of the chamfer with a circular groove adapted to hold an elastic packing ring in place so that it will not fall off; the two shoulders adapted, when brought together, to engage and hold firmly a packing ring between them; an elastic packing ring; and means to draw the two tubes parts together to make a tight joint and interlock them together.

No. 543,993.—Lawn-Sprinkler. Frederick E. Kohler, Canton, Ohio.

A lawn sprayer comprising in combination, a plug casing, passages extending diagonally therethrough, a spinner mounted to freely rotate above the casing, and a turn plug, operating in the casing, the plug provided with two ports which are adapted to be brought simultaneously into register with the passages, and direct the stream against the spinner, at opposite sides thereof, and further provided with a third port which may be brought into register with but one of the passages, to direct the stream at but one side against the spinner.

No 544,122.—Lawn-Sprinkler and Fountain. Nicholas L Rigby, Los Angeles, Cal., assignor to H. W. Fitch, Englewood, Ill.

A lawn sprinkler comprising the combination of a short outwardly tapering shell or nozzle; a thin diaphragm arranged at the base of such nozzle and provided with a series of radial slots extending through such diaphragm and having the wings between such radial slots arranged spirally.

No. 544,134.—Lawn-Sprinkler. Henry C. Strayley, Cleveland, Ohio.

In a lawn sprinkler, the discharge nozzle provided with the openings through its end for separate jets of water, combined with the pivotal rod which projects above the end of the nozzle, and is provided with a stop at its upper end, and the spirally bent plate which extends around and revolves upon the rod, and is provided with a ring at each end through which the rod passes, and which rings hold the plate loosely in position.

No. 544,240.—Hose-Bridge. John P. Terry, Baltimore, Md., assignor to Edward D. Booz, same place.

The combination of a hose bridge constructed to fit the top of the rail; a clamp consisting of a hooked bar having a vertical slot; a bolt passing horizontally into the bridge through the slot; and a set-screw for tightening which passes down through the upper end of the bar and bears against the bolt.

No. 544,928.—Spraying Attachment for Nozzles. Alwyn Patterson, Denver, Colorado.

A spraying attachment for nozzles, comprizing a plate having a portion bent at an angle relative to the body portion thereof, the bent portion being convex in cross-section and provided with upturned edges, a spring clamp having resilient corrugated arms located near the rear of the first mentioned plate, and a spring-clamp constructed with resilient arms having pairs of oppositely arranged bends therein located near the forward portion of the first mentioned plate.

No. 545,320.—Lawn-Sprinkler or Irrigator. John P. Van Sickle, Pasadena, Cal.

A lawn sprinkler or irrigator consisting of two chambers having a common inlet passage for the water, a dividing or separating tongue or edge placed opposite the inlet, each chamber having a dome shaped upper part provided with a discharge orifice.

No. 545,352.—Hose-Coupling. William Earl, Norristown, Pa.

The hose coupling comprising the male member having radial lugs or projections, the female member having bayonet slots to receive the lugs or projections, and the catch pivoted upon the female member and having a notch in its under side at one end to receive one of the lugs or projections, the catch also having in one side, opposite its notch, a beveled indentation to provide, as the members are screwed together for the passage of one lug or projection engaging therewith into the notch, the catch having its opposite end resting upon an elastic cushion to permit the forcing down and locking of the engaging or notch-bearing end of the catch with the aforesaid lug of the male member.

No. 545,656.—Nozzle for Garden Hose. Frank Lewis, Pleasanton, Cal.

As an improved article of manufacture, a spray nozzle for lawn and garden hose, comprising a nozzle body having a series of lateral discharge openings, and a flaring deflector fixedly attached to the nozzle body and formed of pliable sheet material which is adapted to be bent into a variety of forms and which will retain the shape imparted thereto.

DRUGGISTS' AND STATIONERS' SUNDRIES.

No. 544,014.—Continuous-Flow Syringe. Frank Terramorse, San Francisco, Cal.

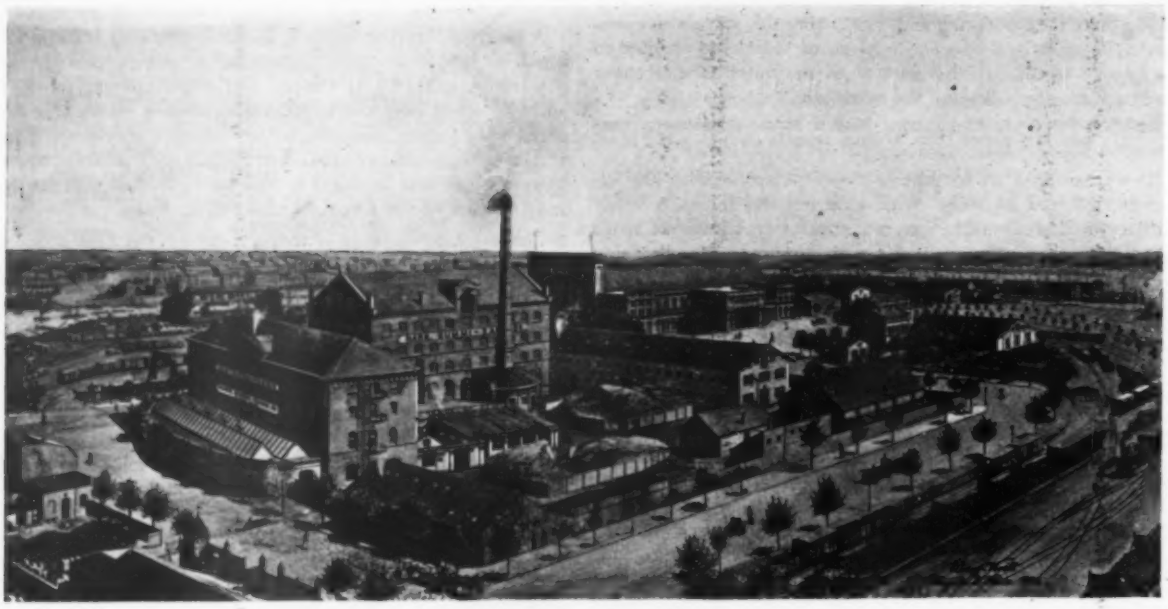
In a syringe, an elastic bulb, induction and eduction pipes connected therewith, a discharge pipe or nozzle, a chamber or reservoir intermediate between the syringe eduction pipe and the terminal nozzle, a spring actuated plunger automatically moveable within the chamber to exert a constant pressure upon the contents, and a reservoir with a connecting passage between it and the chamber near the discharge nozzle.

No. 544,671.—Pencil-Holder. William E. Karns, Parker's Landing, Pa.

In a safety attachment for use in connection with the pocket of a garment, a hard rubber case or mouth piece provided with downwardly converging, soft rubber lips, the wire loop or frame for holding the device in proper position, and the pointed ends of the wire loop or frame projecting through the hard rubber case or mouth piece for engaging the pocket and preventing the escape of the holder.

No. 545,647.—Syringe. Johannes F. Hartz, Detroit, Mich., assignor to E. J. Hussey & Co., New York, N. Y.

A jointless, vaginal syringe of smooth, hard material comprising a shield, the hollow flexible edge on the shield a nozzle with jet apertures, an inlet nipple communicating with the nozzle, and an outlet nipple for the waste-liquid, all rigidly and jointlessly connected, whereby the formation of crevices for the collection of filth and germs is avoided and cleansing facilitated.



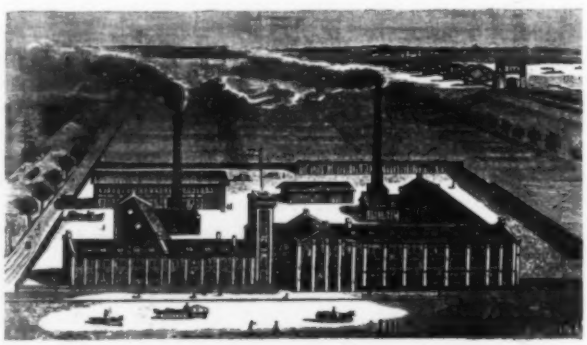
THE FACTORY AT HAMBURG.

FACTORIES OF THE HARBURG RUBBER COMB COMPANY.

TWO illustrations which are presented here give a good idea of the extent of the factories of an important German rubber company, suggesting their convenience of location and arrangement, with provision for the welfare and comfort of the employés. It is the Harburg Rubber Comb Co. which is thus represented, with its great establishments at Hamburg and Harburg, on opposite sides of the river Elbe. Something on the history of this company was printed in THE INDIA RUBBER WORLD in February of last year—how it was founded at an early date by Dr. H. C. Meyer, Jr., and benefited by the inventions of his cousin, L. Otto P. Meyer; how Dr. Heinrich Traun joined the firm in 1863 and contributed in many ways to its success, becoming at length the proprietor, a position which he holds to this day; and how the stability and success of the concern have been promoted by Dr. Traun's methods of dealing with his working force.

The larger of the two plants is in Hamburg; it is also the original establishment, dating back to 1818, though of course a great change in the character of its products has taken place in that time. As will be seen from the engraving, ample ground space exists for all the buildings included in the plant, and opportunities for ornamenting the grounds have not been overlooked. Between the factory-buildings and the river may be discerned a long building of iron and glass—the Paris railway station. It is separated only by the width of the street from the rubber-works—a circumstance which has tended greatly to convenience in conducting the company's business. But the railway does not afford the most important means of transportation. Back of the rubber-works runs a canal connected with the Elbe, by means of which boats approach the factory quite closely, bringing the coal needed for the steam-engines, and the rubber and other materials used in manufacture The water used is pumped from the canal. Beyond the railway station may be seen the first section of the bridge over the Elbe. At this point an island occurs in the river—Wilhelmsburg, it is called—and the bridge is in two sections, each extending from the island to one of the shores.

So near to the river is the Harburg factory that not more than twenty minutes need be consumed in going between the offices of the two plants, including the trip over the bridge. The Harburg plant is also near a railway depot, and in other respects it shares the conveniences of approach and transportation which distinguish the plant in Hamburg. There have since been times when the Harburg plant has been practically unused, but so extensive has been the business of the company in recent years that all their facilities now remain fully employed.



THE FACTORY AT HARBURG.

MACKINTOSHES AND MACKINTOSH CLOTHS.

A CONDITION of backwardness is apparent in the mackintosh trade this season. The dry, hot weather—unusually prolonged and unexpectedly severe for the time of year—has had a far from stimulating effect upon buyers of waterproof goods. Then there have been other causes to retard the bringing out of samples, both of domestic and of foreign goods. Indeed there seems to have been a good deal of waiting for new styles or patterns that never came. The market is decidedly without novelties, in either material or make-up.

Scarcely anything new in mackintosh cloths has been offered for two years past, and the trade continues to be in blue and black—in plain goods instead of checks. Buyers have become so very conservative that they do not trust themselves to make purchases until the tastes of their customers have been consulted. They will order only a few pieces of each color of a new weave of cloth, and, in the case of garments, not even one each of all the sizes in a line. A manufacturer here and there has attempted to place a new article on the market, only to find large houses —even when the goods were approved of—disposed to limit their first orders to scarcely more than the cost of getting out the samples. From the present outlook it would seem that 90 per cent. or more of the season's trade in mackintoshes would be on the same lines as existed last year. This situation is one which, in the opinion of some, it were wiser for the trade journals to ignore, since the publication of the facts might discourage manufacturers from bringing out a possible new success, the effect of which would be beneficial to the whole trade. But it must be presumed that manufacturers who know their business at all must be aware of the existing peculiarity of the trade.

One reason why something new in mackintosh goods would be welcomed is that a better prospect would be afforded for revising prices, which have been forced, by long-continued competition in an otherwise featureless market, down to what must now be rock-bottom. So long as there is nothing new to offer in the way of materials, the mind of the buyer is concentrated upon prices, and under such conditions talk of advances is out of the question. But the possessor of an attractive novelty, upon its first appearance in the trade, might be enabled by it to benefit himself materially in the way of prices. What has been written above has been with reference to woolens, though similar conditions apply more or less to cotton materials used in the manufacture of mackintoshes. But a factor which can hardly fail to cause an upward tendency in the prices of cotton goods in a short time is the advancing price of raw cotton.

Within three years past the market for mackintosh goods has passed largely into the hands of the American manufacturer. It appears that whenever the demand for a certain line of cloths has made a large production necessary, the home manufacturer has speedily become able to make the goods at a price as low or lower than the imported goods. In lines in slighter demand here, the American weavers have not always cared to enter the market. But a similar condition prevails with regard to all kinds of manufactured goods, textile or otherwise. Many wearers of mackintoshes have come to prefer the domestic goods, and especially the home-proofed cloths, on the idea that cloths rubber proofed in the humid climate of England do not give equal satisfaction in the dryer climate of America. The representatives of an English house in New York are said, within a short time past, to have added to their own line the product of an American loom, and, what is of more interest to the trade, to have imported some of their own cloths to be waterproofed on this side of the Atlantic. Of course the demand for imported goods still has a footing. In a fashionable men's furnishing-goods store it was asserted that their principal trade in mackintoshes was in foreign materials, though goods from a high-class American factory had been regularly displayed beside the imported stuffs. In this store, by the way, as elsewhere, the report was that only plain materials were in demand, with nothing new in styles worth mentioning.

The mackintosh trade, as a whole, affords an excellent illustration of the great diversity of business conditions in the United States. For instance, the demand for mackintoshes seems to be steadily increasing in certain sections of the country, where a rain coat is considered as more essential than a warm overcoat. In portions of the South a mackintosh, primarily bought for its legitimate use in affording protection from rain, is the only outer coat worn during the winter. A single house, in a southern city, which formerly carried a stock in winter including $20,000 worth of overcoats and $3000 worth of mackintoshes, is mentioned as having reversed the figures, selling now several times more mackintoshes than overcoats. Some people are deceived into believing that a rubber coat is warm for the reason that when it is worn for any length of time the wearer begins to perspire. There are others who sacrifice comfort to looks, and a respectable appearance can often be made with a mackintosh for less money than with an overcoat.

In New York, on the other hand, both in an exclusive tailoring establishment and in a popular retail clothing-store, doubt was expressed whether more mackintoshes were worn by their customers than formerly; possibly fewer of them were worn; certainly fewer were sold from the retail store than were sold eight years ago. And in both places the impression was that a city customer who meant to buy only one outer garment for winter would certainly select an overcoat in preference to a mackintosh. As one dealer put it, the mackintosh is of limited service in protection against rain, anyhow. The rain doesn't fall straight down in our country, but in slanting lines, splashing against the bottoms of one's trousers, no matter how

one is dressed. The upper part of the body may be amply protected in a rain-storm by an umbrella, while any good overcoat would shed the water from a slight shower. People generally will find that colds result from dampened feet rather than from the effect of rain falling upon the upper portion of the body. The declining popularity of the mackintosh experienced by an importing house was attributed to the cracking of the proofing, which, it was asserted, took place abroad as well as in similar goods imported here, unless better care were taken of the garments than most wearers wished to be troubled with.

Before taking leave of materials, cravenette is to be considered. This is claimed by the importers to be holding its own as a material for shower-proof garments, for men or women, besides which its use is extending because of its suitability for traveling cloaks and wraps—an item of no small importance in a country where so many people find occasion for long journeys by rail. Similar testimony regarding the popularity of cravenette, however, was not to be found in stores at which inquiries were made, and in which at one time it seemed that the mackintoshes would be utterly replaced by the new material.

The testimony of a clothing firm is that the prices of their mackintoshes have not materially declined within the past five years. Meanwhile there has been a decline in the price of materials, but this has been turned to the advantage of customers in giving them better garments for the same money. A buyer for a department store—a man with twenty-five years' experience—thought that the indications existed for a demand for a better grade of goods generally, mackintoshes included. It may be that the purchasing power of the people is actually increasing, or that, through becoming more hopeful of the future, they are more willing to spend money. At any rate, the house was selling, a year ago, a great many low-priced waterproof garments, with a good deal of wear in them for the money, but not especially attractive. Now the same goods are passed by for better grades. In every line of goods handled by the house it is claimed that better values are offered for the money than ever before, many articles selling for only half the money once charged, and mackintoshes were named as having experienced this reduction. But prices and qualities of mackintoshes have become as varied as in any other line of merchandise.

THE RAINY-DAY CLUB ON MACKINTOSHES.

By Fannie B. Merrill.

THE Rainy-Day Club of the Professional Woman's League was in congress assembled. Every door was closed and no outsiders were admitted; but that omnipresent little bird who brings tales from many sources managed to gain entrance even here. The seven bold members who had volunteered to adopt, if forty-three other women could be induced "to make fools of themselves, too," as Cynica remarked, a rational attire consisting of knickerbockers, leggins, and stout boots were devising schemes, not for the conversion of recalcitrant sisters but to keep the courage of their own number up.

"Women are always said to be lacking in *esprit de corps*," said the Most Advanced One. "Let us prove to the contrary."

"How can you expect to make converts?" asked the Least of All, eyeing in dismay her sister who to prove her point had donned the costume in question.

The Least of All has artistic tendencies and she resented the baggy awkwardness of the rational costume and the scraggy awkwardness of its wearer. "I know I shall shriek every step I take with my—my—I mean with no skirts on."

"Oh," announced the Most Advanced, "but the freedom of it, the rupture of the binding shackles of conventionality. In this suit I have full control of every muscle. If I wish to board a moving car I can spring rapidly forward," and she suited the action to the words. But unfortunately the League club house has polished floors with rugs thereon as delights the heart of woman. The result was unpleasant for the advocate of the rational dress.

"Do you know," casually remarked Cynica, "I believe that on the day we agree on every woman of us all will find she has urgent duties to keep her at home and will think that the other forty-nine will never miss her."

This remark was greeted with scornful silence and the discussion went back to the wearing apparel suitable for a rainy day. Knickerbockers and bloomers gradually yielded to short skirts and the exact length was threatening to cause an eruption among the trusty seven when suddenly the rebellious Least of All shocked them into soberer thought.

"I don't believe any of you really believe that all these outlandish rigs are better than a mackintosh anyhow. For my part, when I think of going about with"—she shuddered—"with short skirts or no skirts I have holy horrors. I'd never dare face a man I knew again if I happened to meet him in a rig like that. Now if any of you own mackintoshes, real nice cloth-finished ones, you must know what a comfort one is. You can turn up your dress-skirt if you've a mind to, or wear none at all, and yet be decently and properly clad. Suppose you came across Tom when you were without your skirts—" she added with a most seductive *argumentum ad feminam* as she turned on one of the seven—"or suppose you met Fritz—" directing her gaze upon another—"and you, my dear Most Advanced One, suppose that the Professor with suffrage leanings should see you in your abbreviated attire? Only exclamation points could express your feelings I know.

"But you take a swell-looking mackintosh with its double or triple capes and high collar, and you can't help getting a correspondingly swell air. If we want to adopt a really rational rainy-day costume we'll not exclude the mackintosh, no matter"—and she blushed—"no matter how little or how much we wear in addition."

Virtuous indignation reigned in the halls of the seven while Cynica murmured: "Sometimes we like to hear our own ideas preached by another before we adopt them ourselves."

One of the seven who had been content to listen up to this point piped up suddenly: "There's one thing that I like about a mackintosh above all others, and that's the big roomy pockets. One can put bundles, pocketbook, and handkerchief into them and devote all one's hands to lifting skirts and umbrella."

"Yes," chimed in another, emboldened now to the defense. "And then the way they are made now with or without sleeves gives everybody a chance for her own taste. I personally prefer those without sleeves, for I always wear a jacket underneath."

By this time the Advanced One had retreated to a distant corner and was nursing her wrath to keep it warm, when the Least of All hit upon a plan to reconcile her. Stepping quietly from the room she fetched her own "swagger" black mackintosh with its handsome cloth finish and fluttering capes. She added her own tasteful black Alpine hat, and returning to the room, inveigled the Most Advanced to try them on "just for fun." One look in the glass convinced the Most Advanced.

But she let them argue three hours and forty-five minutes before she acknowledged it.

INDIA-RUBBER FACTS TOLD IN FIGURES.

THE figures in the following comparative table, showing the British imports of India-rubber at different periods are from official sources, except that quantities are here expressed in pounds, for the convenience of INDIA RUBBER WORLD readers. The table does not include Gutta-percha or Balata, which are classed together in a separate record kept by the British customs service:

	1886.	1890.	1894.
Africa—			
East Africa—Portuguese	153,328	324,240	132,272
Native	353,584	813,456	482,944
Gold Coast and Lagos	....	2,042,880	2,551,024
Madagascar	....	624,848	984,816
Mauritius	73,696	....	168,336
South Africa—British	259,504	41,888	141,120
West Africa—British	2,451,904	1,751,232	2,765,168
Portuguese	542,528	261 296	402,528
Other	2,124,528	3,784,704	2,086,112
Total, Africa	5,959,072	9,644,544	9,714,320
America—			
Argentina	....	....	96,432
Brazil	10,186,176	12,825,120	15,765,344
Central America	55,776	10,528	75,936
Colombia	59,248	252,784	231,168
Ecuador	....	....	20,608
United States	808,864	1,539,888	1,534,176
Uruguay	29,344	....	50,400
Total, America	11,139,408	14,628,320	17,774,064
Asia—			
Aden	558,208	22,624	35 952
British India	1,968,736	1,836,912	1,063,216
Straits Settlements	677,600	....	1,064,336
Total, Asia	3,204,544	1,859,536	2,163,504
Europe—			
Belgium	....	58,912	91,616
France	498,400	572,992	1,022,560
Germany	160,608	886,144	1,250,144
Holland	158,256	382,592	151,424
Portugal	625,856	1,301,328	1,073,408
Russia	....	....	127,120
Total, Europe	1,443,120	3,201,968	3,716,272
All Other—			
Sundry Ports	65,632	234,528	506,352
Grand Total	21,811,776	29,568,896	33,874,512
Reëxports	12,480,944	15,962,688	19,176,304
Net Imports	9,330,832	13,606,208	14,698,208

England is to-day the largest direct importer of crude rubber from Africa, and the table shows a marked growth in the rubber output of the British possessions in Africa. Most of the rubber credited to Europe in the table is of African origin. Liverpool thus becomes the principal center for the trade in African rubbers, and is the principal source of supplies of these grades for the United States A line at the bottom of the table shows what a large percentage of British imports of rubber find their way finally to other countries, and it may be added that such shipments to the United States are larger than to any other country. The principal portion of the British shipments to America, by the way, consists of African rubbers. The falling-off in Asiatic rubber is less than would appear from the table, since a good portion of the receipts from Aden in 1886 was of African origin.

The remaining feature of the table worthy of note is the steady increase in the direct imports from Brazil, England being the chief distributing market for Europe of Pará grades.

British imports of crude India-rubber for the first six months of the present year slightly exceeded those for the same period of any preceding year. A comparison for four years past, including the months January-June, inclusive, shows the following results:

	Imports.	Exports.	Stock and Consumption.
Six months, 1892	16,360,736	8,280,272	8,080,464
Six months, 1893	15,832,208	8,439,536	7,392,672
Six months, 1894	19,006,064	8,965,040	10,041,024
Six months, 1895	19,468,400	10,165,792	9,302,608

The imports of crude Gutta-percha, in excess of exports of the same, reached 2,338,684 pounds during January-July, 1895, against 2,837,856 pounds during the corresponding period in 1894.

The value of British manufactures of India-rubber exported during the first six months was £561,997 in 1895; £542,282 in 1894; and £588,180 in 1893.

GERMANY.

THERE has been a steady increase in the extent of the German rubber industry for several years past, as will be seen from the comparative table herewith, in which are given in pounds the amount of crude India-rubber and Gutta-percha for the six months of January to June, inclusive, in each year:

	1892.	1893.	1894.	1895.
Imports	5,031,180	5,522,660	6,315,760	8,785,460
Exports	1,061,280	1,092,300	947,540	1,318,900
Net Imports	3,969,900	4,430,360	5,368,220	7,466,560

The exports of German manufactures of rubber have not shown a steady rate of increase, though the figures for the first

six months of 1895 are larger than for any of the three preceding years, as shown in the table herewith. The quantities of rubber goods imported are also shown, all the figures referring to pounds:

	1892.	1893.	1894.	1895.
Exports.....	3,949,240	3,785,200	3,475,340	4,315,740
Imports.....	1,093,180	1,300,200	1,059,740	1,312,960

The values of exports of manufactures of India-rubber and Gutta-percha are officially reported for six months of 1895 at $2,927,500, as against $2,386,250 for the same period last year.

CANADA.

NOT the least interesting feature in the government statistics of India-rubber in Canada is the information which is given with regard to the importations of recovered rubber and rubber substitute, affording a comparison with the quantity of crude gum used by Canadian manufacturers. It must be assumed that all the rubber imported into the Dominion, whether crude or recovered, is for current manufacturing uses, since there is no record of exports of rubber from that country. Nowhere else is any trustworthy information obtainable as to the absolute or relative use of recovered rubber by manufacturers, and for this reason the Canadian figures are all the more interesting. A question which may now be raised is whether the relative use of recovered rubber and substitutes is greater or less in Canada than among rubber-manufacturers elsewhere. The Dominion customs authorities, by the way, classify together raw India-rubber and Gutta-percha, including hard rubber. Similarly, they do not distinguish between recovered rubber and rubber substitute. In the table which follows, the figures represent the quantities of imports, in pounds, for two periods, each of five fiscal years ending on June 30:

FIRST FIVE YEARS.

YEARS.	India-Rubber and Gutta-Percha.	Recovered Rubber and Substitute.	Total.
In 1885-86.....	739,169	19,499	758,668
In 1886-87.....	785,040	46,508	831 548
In 1887-88.....	1,225,893	88,471	1,314,364
In 1888-89.....	1,669,014	221,674	1,890,688
In 1889-90.....	1,290,766	147,377	1,438,143
Total.....	5,709,882	523,529	6,233,411
Percentages.....	91.6	8.4	100

SECOND FIVE YEARS.

In 1890-91.....	1,602,644	8,254	1,610,898
In 1891-92.....	2,100,358	106,080	2,206,438
In 1892-93.....	2,152,855	195,281	2,348,136
In 1893-94.....	2,077,703	529,900	2,607,603
In 1894-95.....	1,402,844	611,745	2,014,589
Total.....	9,336,404	1,451,260	10,787,664
Percentages.....	86.5	13 5	100

Attention is attracted by these figures to the fact that in the last few years the former annual increase in total imports of rubber has not been maintained, and also to the large increase lately in the importation of recovered rubber, the percentage of the latter in 1894-95, as compared with the total importations for that year, being 30½, or nearly three times the percentage of recovered rubber in the total imports for the ten years taken together. By the way, it is to be supposed that the rubber-reclaiming mills which have been erected in the Dominion of late have begun to contribute to the supplies of the rubber-manufacturers there, thus swelling the quantity of recovered rubber noted in the table.

The amount of the imports of rubber for 1894-95 has been obtained from Ottawa in advance of publication there, through the courtesy of the controller of customs, so that the figures first appear in THE INDIA RUBBER WORLD.

RANDOM NOTES FROM PARA.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The depredations of savages continue to be an obstacle to the gathering of India-rubber in the Madeira-river country. Not long ago, near Boincú, on that river, a canoe-load of rubber-gatherers were surprised by a party of fierce savages, who fired upon them with poisoned arrows. Some of the crew escaped by swimming the Madeira, though two of these were wounded. The bodies of the less fortunate ones were found a short time afterward, horribly mutilated. Senhor Monteiro da Costa, the proprietor of a great rubber estate on the Madeira, at once organized a party of 400 Mundurucús—Indians of a friendly tribe—to pursue the marauders, and he has also urgently appealed to the governor of the state of Amazonas to take steps for the protection of the rubber-camps against savage attacks.

Before me lie some specimens of the fruit of the India-rubber tree, somewhat similar to that of the "mamona" (*Ricinus communis*—castor-oil plant), though larger. It has a not disagreeable taste and yields a purplish oil which, as already mentioned in THE INDIA RUBBER WORLD, is a fair substitute for linseed oil, though it dries less readily. According to Senhor Pedro da Cunha, of this city, the rubber-seed oil, mixed with copal glue and turpentine, makes a good varnish, while the oil may also be used to advantage in the manufacture of soaps and lithographic inks. The seeds of the rubber-tree are like tiny chestnuts, but of a darker color. Indian girls are fond of wearing bracelets and necklaces made of them.

The governor of Pará, Dr. Lauro Sodré, to-day received from the national capital an official dispatch announcing the particulars of the organization in London of the Amazon Telegraph Co., Limited, and stating that a commission of engineers from that company may be expected to reach Pará by the end of September, to begin the survey of the proposed cable line to Manáos. THE INDIA RUBBER WORLD may not have published the fact that the yearly subvention from the federal government of £17,125 per year is to be paid for twenty years, and that at the end of thirty years the line is to become the property of the government.

The Amazon Steam Navigation Co., Limited, under their new contract with the federal government of Brazil, are to receive an annual subvention equal to $229,975.20 in United States money, estimated at 54.6 cents to the milreis. Their steamers are not only to navigate the rivers Madeira, Purús, Araguary, and Negro, but also to touch at a number of points on the Amazon beyond the Peruvian border. The company have reduced by 20 per cent. their freight rates from points on the rivers Purús and Madeira.

I have to report the launching at Glasgow of yet another steamer for a Pará business house. It has been christened the *Rio Pauhiny*, and will be operated by the enterprising new rubber firm of Pereira & Brothers.

A contract has been signed by the department of lands, public works, and colonization, of Pará, for the introduction into this state of 3000 Japanese laborers.

GRAO PARÁ.

Pará, Brazil, August 22, 1895.

IN another column will be found a description of a new hard-rubber effect as shown in the "Helios" combs. This process is patented in Germany and in the United States, and is the invention of Dr. Heinrich Traun, proprietor of the Harburg Rubber Comb Co. According to the specifications of the patent it consists of mixing powdered metallic aluminum with the rubber before vulcanization.

NEW GOODS AND SPECIALTIES.

A NEW idea in heel cushions is a series of hollow rubber rings placed between the lifts of the heel and held from lateral expansion by a metallic plate. It is in reality a pneumatic rubber heel and is said to greatly soften the shock in walking.

POWELL'S RUBBER STOPPERS.

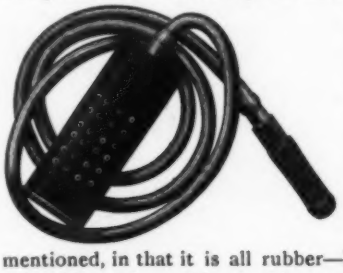
THE article illustrated herewith is a metal-cored rubber stopper for basin, bath, sink, and tray plugs. Formerly rubber stoppers were made to which the objection applied that the brass ring-stud sometimes pulled out of the rubber. Attempts were also made to produce stoppers entirely of rubber, but they were liable to float or shift out of place, while the ring would easily tear away from the rubber neck. The stopper here described, being heavily weighted with a metal core, cannot float out of its socket. All the metal parts are entirely encased within the rubber, so that there is no possibility of injury to bath tub linings, or the most fragile or delicate basins, by dropping the stopper within them. As shown in the sectional view of the cut, the metal core runs up into the neck and forms a loop to hold the ring, thus taking all the strain entirely off the rubber envelope, while it is impossible to separate the core from the rubber casing. Manufactured by the Wm. Powell Co., Cincinnati, Ohio.

POWELL'S RUBBER STOPPER.

SECTIONAL VIEW.
A, is the Metal Core.
B, the Rubber Casing.

A NEAT POCKET FILTER.

AT the time of the civil war the government was greatly exercised over the fact that the troops drank from streams, ponds, and pools, water that, to say the least, was not limpid. Uncle Sam therefore provided the boys with pocket filters, consisting of a rubber tube with a porous cup affair on the end that although it was always getting lost or broken was highly valued. The filter shown in the illustration is far ahead of the one mentioned, in that it is all rubber—hard-rubber mouth-piece, soft rubber tube, and hard rubber strainer. It is also very compact and is easily carried in the pocket. There is also a more potent plea for this article in that it is timely. With the whole country on wheels, riding on hot days, over dusty roads, drinking as did the soldiers where they find water, there is a need for this filter. Manufactured by The B. F. Goodrich Co., Akron, Ohio.



SCOTCH BAGPIPES OF RUBBER.

INSTEAD of the ancient arrangement whereby the air is stored for bagpipes, a new idea is a strong rubber bladder which can be inflated to give a steady and even pressure on the pipe. It is found in various toy stores.

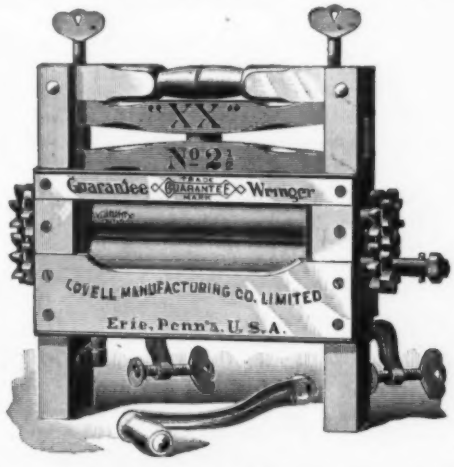
THE HELIOS COLORED COMBS.

THE name given to these combs is due to the fact that "their brilliant coloring suggests the idea of the radiant sunbeams accompanying the rising of the sun from the darkness of the night." The effect that is secured in this rubber is unusual and

is the subject of letters patent which relate to combs and other hard-rubber articles having a metallic luster such as described. The combs are certainly very pretty, are exceedingly durable, and are warranted for one year. Manufactured by the Harburg Rubber Comb Co., No. 335 Broadway, New York.

THE "GUARANTEE" CLOTHES-WRINGERS.

THE manufacture of clothes-wringers forms an important feature of the business of the Lovell Manufacturing Co., Limited, of Erie, Pa., who are not, by the way, connected with the American Wringer Co. While they have an extensive line of wringers, known to the trade for a good many years past, they are attracting special attention at this time to what they call their "Guarantee" wringers. These contain a special quality of India-rubber, and are sold under a guarantee for a certain number of years to those who are willing to pay for first-grade goods. It is pointed out by the manufacturers that their "Guarantee" wringers are offered at wholesale for little more than half the standard prices of wringers twenty years ago, although crude rubber costs practically as much to-day as then, the reduction in price being due chiefly to the improvement



in methods of manufacture meanwhile. The competition which has grown up in the trade, according to the same firm, has led to the introduction of many wringers lacking the two desirable qualities of softness and durability, both of which are claimed for the "Guarantee" line. By the way, they state that their wringer-rolls—in which the rubber is vulcanized to the shaft—are manufactured by a house which made good rolls twenty years ago. A test is reported in which a "Guarantee" wringer ran 53 revolutions per hour, under a pressure of 450 pounds, for 474 hours.

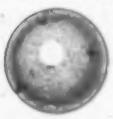
THE HYGEIA ATOMIZERS.

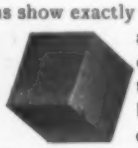
THE manufacturers of the "Hygeia" claim that it is unique and valuable among atomizers for the reason that it vaporizes the oil instead of spraying it. From a medical point of view a spray reaches only the place where it is locally administered, while a vapor is drawn into the lungs, reaching all of the respiratory organs. The vapor is produced by the spray being

thrown against the inner walls of the nasal cones, where it is broken into vapor, the surplus oil running back through a hole in the tube provided for that purpose. These atomizers are made to vaporize any oil, heavy or light. The parts that come in contact with the oil are made entirely of hard rubber, rendering the atomizer thoroughly antiseptic. Manufactured by The Hygeia Specialty Co., No. 180 Pearl street, New York.

SOCIETY BALLOTS OF RUBBER.

THE illustrations show exactly what these goods are and no amount of description will give one very much more information concerning them, than can be gleaned by looking at the cuts. They are simply a black cube and white ball, and as everybody knows are used in club and society elections. Manufactured by H. O. Canfield, Bridgeport, Conn.





BOSS'S SHAFT-COUPLING.

NOT the least desirable feature of a shaft-coupling for carriages and other vehicles is that it shall be noiseless, and a leading object of the inventor of the coupling illustrated herewith has been to secure absolutely "no rattle." While the engraving has not been designed with a view to making the rubber cushion prominent, our readers doubtless will be able to recognize it in the square block in the center of the device, which has been shaded a little in the drawing. The design of the inventor is that this rubber shall fit so closely as to prevent any rattling from the working of the metal parts. In addition to this desirable achievement, he has kept in mind the need of providing for the time when the rubber shall have become worn, and an arrangement of metal washers is included, whereby there may be an easy and quick adjustment to take up the loss, until the cushion has been entirely worn away. Good service is promised from the rubber from one to two years. The device has been patented, and is being placed on the market by the inventor, who is at the head of the Boss Lock Nut and Coupling Co., No. 20 Vesey street, New York.

AN ICE-BAG OR WATER-BAG FOR THE EAR.

THE use of hot water and cracked ice in hospital work, and in private practice as well, has led to the invention of many ingenious receptacles for the retention of the hot or cold contents. None perhaps have found a wider field of usefulness or are neater and more effective than the article here illustrated. It is the invention of Dr. F. B. Sprague, of Providence, R. I., and is used at the Massachusetts General Hospital, the Ear and Eye Infirmary, etc. It is a substitute for the Leiter coil and can be filled with cracked ice or hot water. A clamp (not shown in the cut) securely closes the neck, making it water tight. It can be fastened over either ear (the auricle protruding through the opening), by means of tapes tied to the loops. Manufactured by the Davol Rubber Co., Providence, R. I.

BARNES'S SELF-FASTENING RUBBER HEELS.

THIS heel is made of a good quality of vulcanized India-rubber and so arranged that it fastens to a lift on the heel of a leather shoe, and when fitted forms a pneumatic cushion, thus making the heel much more resilient. The rubber heel can be turned around and thus obviates wear on any particular side. It is noiseless, and is said to make walking very much easier. They are made in sizes to fit any heel. Manufactured by The Requa Manufacturing Co., No. 86 Fulton street, New York.

THE BUNKER BICYCLE-SADDLE.

ONE of the newest of the pneumatic bicycle saddles is shown in the illustration, from which it will be seen that it is mounted in transverse position, the inventor having sought thereby to avoid all possible injury to the parts of the body which come into contact with the bicycle-seat. Another advantage claimed for the new form is that, nothing being interposed between the limbs of the rider, greater freedom of knee-action is attained, preventing friction or deflection of the muscles, and tending to greater speed in riding. The air-cushion is formed of an India-rubber bag, provided with an inflating-valve of standard size adapted to fit the ordinary tire-pump. The body of the saddle is made of calf-skin, linen lined. This is known as the Bunker saddle, from the name of its inventor; it is made in different weights, and with different diameters of stem; and the price is $5. George W. Wolfe, who rode this saddle recently from Chicago to New York, lowering the record, is quoted as saying that he was not troubled with saddle-soreness on the trip. Manufactured by the Bunker Saddle Co., Nos. 208–210 East Lake street, Chicago, Ill.

BUNKER SADDLE, NO. 2.

A NEW SHOE FOR LUMBERMEN.

THE Lycoming Rubber Co., whose factory is in Williamsport, Pa., are doing a good business in lumbermen's goods and especially in their "Girard" shoe, which is something new in lumbermen's footwear. It is a shoe and felt sock combined, and it is so made that it is practically impossible for any snow to get inside the shoe. The sock is made with a double lap and so is the shoe. The sock goes down into the shoe, after which an outside thickness of the sock pulls down over the shoe. A lower flap of the shoe comes up over this outside thickness of sock and laces in front, so that there is at the ankle a double overlapping of shoe and sock, rendering it almost impossible for any snow to work its way in. And yet the shoe is not at all heavy or clumsy. The lumbermen of the northwest are said to be taking to this shoe with great rapidity.

THE DUPLEX EAGLE DRESS BONE.

FOR many years past inventors have been trying to find a substitute for whalebone. This has been made necessary for the reason that the supply of the natural article is constantly diminishing. Scores of articles have been brought forward with a view of taking its place but none have really been successful until the substitute described in this article was produced. The "dress bone" is really a hard-rubber whalebone reinforced with two strips of steel running its whole length. The vulcanite is made so that it is extremely flexible, and as far as wear goes it is far superior to whalebone. One point of advantage that at once commends itself is the fact that it is pierced at intervals with holes so that it may be sewed into the dress. These bones are very thin, strong and elastic and never vary in shape or finish. They never dry up, split, or break, and the edges and surfaces are so smooth that they cannot cut or wear the cloth. As is well known hard rubber is not affected by boiling hot water, hot irons or by perspiration. They are made in fourteen different lengths so that there is no need of cutting, nor is there any annoyance from rough edges. Manufactured by Julius Janowitz, No. 135 Grand street, New York.

THE SKULL AND BONES PISTON PACKING.

THE very effective trade mark here shown goes with a packing that is said to be equally effective. It is made of the best cotton fiber, on a round rubber core, and unusual care is taken in its manufacture. The lubricant used is Dixon's best graphite and the result is a packing which is said to be more economical in use than the ordinary packings. It does not possess the doubtful property of wearing out quickly and requiring constant replacing. Manufactured by Western Steam and Water Packing Co., W. D. Allen & Co., proprietors, No. 151 Lake street, Chicago, Ill.

A NEW ETHER INHALER.

AN ether inhaler that is having a large sale and that is exceedingly practical is shown in the accompanying illustration. The chief point of interest about it, is without doubt the rubber mouth-piece, which is pneumatic and can be inflated to any degree of hardness or softness. It is attached to the cone ready for use, and when in use can be made to fit the face so tightly that no air can enter under the edge of the rubber. The use of the inhaler is very simple; a quantity of fresh cotton waste is put around the wire inner cone which is then placed in the tin cone. The waste is then well saturated with ether, the cone being held an inch from the face for the first half dozen inspirations. When against the face ether may be added without removing the cone from the face. This inhaler is far more practical and useful than the towel, wicker, or paper cone, as it is light, clean, and easily prepared for use, and yet perfectly rigid. Manufactured by Leach & Green, 4 Park square, Boston, Mass.

THE HARVARD AND PROTECTOR ALASKA.

THE first of these shoes is what is known as a light self-acting Alaska. Heretofore it has been made with the regular toes, but this year it is made up with the fashionable piccadilly toe. The upper is of fine Jersey cloth and the shoe is lined with black fleece.

HARVARD.

It is one of the well known Bell Brand shoes, as is also its companion the Alaska Protector, shown in the second illustration. This is an extra high cut croquet, is fleece lined, the upper being of Jersey cloth. This is also made in the regular London and piccadilly toes and in three widths. Manufactured by the Boston Rubber Co., Boston, Mass.

PROTECTOR.

HARD-RUBBER STRAINING FUNNEL.

THE illustration shows a very neat type of funnel for use by druggists, chemists, and in physicians' offices. It is particularly adapted for laboratory work, as it is made in two parts, so that a paper or cloth strainer or filter may be inserted in the body of the funnel and held firmly in position. It is said to be much better than a glass funnel, for the reason that it is not liable to break, and as it is made of the best quality of vulcanite there is no danger of its being affected by acids or corrosive liquids. It weighs 4 ounces. Manufactured by Whitall, Tatum & Co., No. 48 Barclay street, New York.

A RUBBER-SHOD CAR-FENDER.

A new car-fender, which is said to be superior to anything yet shown, has recently been designed by a southern inventor. In its normal condition it is carried six inches higher than the track and extends six inches beyond the rails on either side. By simply touching a spring it flies outward and is lowered to rest on the rails making it impossible for anything to get under

the car. It is so arranged that when a body is struck, if it is not thrown aside, it will be caught up and carried along in a basket without injury. The tip of the fender or part which slides on the rails is made of rubber one-fourth of an inch thick, and is protected from friction with the track by two strips of brass clamped to the rubber on the under side. It is also equipped with a sheet of rubber which, when the fender strikes an object readily rolls up and deposits the body in the basket-like arrangement, without inflicting bruises of any consequence. Invented by H. L. Falk, New Orleans, La.

A COMPOUND FOR SHOE-SOLES.

A COMPOUND that is largely used in England for mixing with India-rubber in the manufacture of shoe soles to imitate leather, is described in what follows. It is used for molded patterns only, and can be pressed into sheets of any thickness from 1-32 inch upwards for what are called clump soles and heels. It is said that this material when properly vulcanized will last three times as long as ordinary leather, it also being light and both weather and damp proof. It has been found of especial value for athletic shoes. In addition to this it is of advantage in the manufacture of large conveying belts, for an outside covering and is said to outwear ordinary compounded rubber for that purpose. The ordinary formula for use is to 10 lbs. of medium rubber add 25 lbs. of this compound, the whole being vulcanized one-half an hour at 270° F. This is known as Special Compound No. 2, and is manufactured by Typke & King, New York and London.

THE DAVIDSON HEALTH NIPPLE, NO. 48.

THERE are two points of especial excellence about this type of nipple that are easily explained, and just as easily appreciated. The first is that, owing to the swelling of the walls at the middle, it is impossible for the nipple to collapse, no matter in what position it be placed; the second is that it cannot go further than it should into a hungry infant's mouth. These nipples are made in white, black, or maroon, in two sizes, and further are made of the best quality of rubber that can be secured. Manufactured by The Davidson Rubber Co., Boston, Mass.

RUBBER IN DRESS- AND CORSET-SHIELDS.

AN example of the success of rubber goods manufacturers in overcoming any odors attaching to the gum used was mentioned by Eugene Pearl, the inventor of the corset-shield bearing his name, on his recent return to New York from a long business trip westward. Not only is India-rubber one of the materials used in these goods, but its presence is acknowledged and pointed to as a source of merit. Mr. Pearl says that though he talked with hundreds of dealers in goods of the class sold by him, only one made the objection that his shields contained India-rubber. There are, however, dress-shields and corset-shields made into which no rubber enters, and doubtless the manufacturers of some of these are ready to disparage the rubber goods in order to help the sale of their own. Be this as it may, popular sentiment is hardly against rubber shields, since a New York store noted for the care given to its advertising—it is the house founded by the late Alexander T. Stewart—recently advertised in a very prominent way that the dress-shields which it sold comprised "the best Pará gum."

RUBBER-SEED OIL.

TO THE EDITOR OF THE INDIA RUBBER WORLD: I read an article in your last paper in reference to rubber-seed oil, and as I am very much interested in this, and would like to get a sample to experiment with, I would be pleased if you would give me the address of any party from whom I could get some of this oil, and any further particulars that you may have.

R. G. SALOMON.

Newark, N. J., September 20, 1895.

[THE oil of the seeds of the rubber-tree has not yet been prepared by anybody on a commercial scale, though considerable attention has been attracted to it in Pará. Our recent reference to it was due to its mention in a pamphlet published in Portuguese by the government at Pará, and written by Senhor Pedro da Cunha, chief of the inland revenue department for the state of Pará. No doubt a letter addressed to this gentleman would be courteously and promptly answered. Our correspondent, Grao Pará, makes some reference to this oil in a letter printed on another page this month.—THE EDITOR.]

TESTS OF RUBBER TIRES IN BERLIN.

FROM Berlin reports come of the testing of rubber-tired stages, on the Potsdam-Treptow road, involving some considerations which we do not remember to have seen raised hitherto. According to *Die Gummi-Zeitung* (Dresden): "The Berlin stages on rubber wheels so far have been successfully experimented with. The series of tests have not been completed, and the solution of the question as to whether all the wheels should be rubber-tired is still to be decided. The first experiment was with all wheels rubber-tired; the second trial was with a vehicle having rubber tires on the front wheels only, the rear wheels having the ordinary iron tire. At present the vehicle is running on three rubber wheels, while the left rear wheel has an iron tire."

ELASTIC POLICE-STICKS.

THE police commissioners of New York city have had submitted to them a rubber day baton by its inventor, who claims all sorts of things for it. This stick is shaped like the common hickory "billy." It is made of wood and has a rubber cover one-half inch in thickness. The point of excellence claimed for it by its inventor is that, while a blow from it will stun a man, it will not disfigure him or fracture any bones. The rubber gives to the club the properties of a sand-bag—service without bloodshed. The old-style rosewood and hickory "billies" generally tear the scalp or flesh wherever they strike and oftentimes fracture the skull or break the bones of the body like those in the arms and legs. The men on the police force, however, do not take kindly to the idea of the new club, and, according to the New York *Mail and Express*, it is hardly likely that they will be indorsed by the commissioners.

ACTIVE efforts are being made in the German colonies on the west coast of Africa to make the most out of the India-rubber, which abounds all along the coast. Not content with utilizing the native varieties, Dr. Preuss, director of the botanical garden at Victoria, in the Cameroons, is experimenting with Pará rubber, of which he has some specimens now four or five meters in height.

THE NEW INDIA-RUBBER FACTORIES.

THE newspapers of Akron, Ohio, are jubilant over the fact that another "immense manufacturing establishment" is to be located in that city and managed by its citizens. According to them the negotiations for the location of the plant, which have been going on for some time, are completed and ground will be broken very soon. A company, it is said, has been organized with John F. Seiberling as its general promoter and president, for the manufacture of all kinds of soft rubber goods. Its specialty, however, will be pneumatic tires. It is said that the machinery has already been ordered and will shortly arrive and be set up, as it is the intention of the company to begin manufacturing at once. Regarding the size of the plant, it is reported that a new brick building 140 feet long and three stories high is to be erected, and used in connection with a part of the Empire mower and reaper plant formerly used as a store-room for machines. The new plant will have a capacity of 800 bicycle tires a day, and 300 men will be given employment.

* * *

SEVERAL reports have been printed lately regarding a new rubber-shoe factory, to be started at Reading, Mass. As a matter of fact, the plant is not a new one. It was built several years ago for the Chauncey Rubber Co., and, later, was owned by the Metropolitan Rubber Co., who sold it out to the Massachusetts Rubber Co., who, in turn, were succeeded by the Emerson Rubber Co. For about a year past the works have been entirely shut down. The work turned out by this factory was almost entirely in mackintoshes and heavy rubber clothing.

The parties who are said to be looking at the plant with the idea of manufacturing shoes are a concern in Lynn, Mass., known as the Felt Shoe Co., who manufacture a specialty called the "Snowdrift" gaiter. It is a shoe with an upper of either heavy or light felt and a sole of rubber. It has also a very small upper of rubber that amounts to but little more than a toe-strip. The "Snowdrift" gaiter, by the way, was illustrated and described in THE INDIA RUBBER WORLD not long since.

It is said that the Lynn company have lately taken out several patents; that they have improvements of value; and that they desire to have a plant where they can manufacture their own rubber parts, and know exactly what they are getting. Not that by this they intend to reflect on the parties that have been supplying them, but that with the whole country clamoring for rubber shoes, and their orders but a drop in the bucket, it is not surprising if they had to wait for goods this year. It is reported that the company will employ between 300 and 400 hands, and that H. P. Emerson, of Reading, the owner of the plant, will be interested in the enterprise.

* * *

SEVERAL reports, more or less definite in form, have been printed lately respecting a new India-rubber factory said to be building at Wilmerding, a suburb of Pittsburgh, Pa. According to some statements work had already been begun, and the purpose of the factory was the making of hose. According to the Pittsburgh *Times* the plant was to be erected by the Westinghouse Electric and Manufacturing Co., at a cost of $50,000, and to employ 500 to 1000 hands. It was stated that the company named had a rubber plant at Hoboken, N. J., for "making rubber bumpers for railroad-cars, and rubber insulators," which would be removed to Wilmerding. Inquiry at the New York offices of the Westinghouse Electric company elicited the statement that they had no rubber plant at Hoboken or elsewhere, that they bought all the rubber goods needed in their business, and that nothing was known of the Wilmerding enterprise.

A letter since received by THE INDIA RUBBER WORLD from the Pittsburgh offices of the Westinghouse Air Brake Co. says: "We believe there is no truth whatever in the report that a rubber-works is to be located at Wilmerding. We know nothing of it and think we would if the report were true."

* * *

ALL the good rubber-workers in the country must be busy just now, judging from a letter received by THE INDIA RUBBER WORLD from a firm who have been planning a new rubber plant. They write:

"The enterprise has not moved towards completion with the rapidity with which we had hoped. The main difficulty has been in securing experienced rubber-men in whom we could place implicit confidence. Those we had hoped to secure were unable to secure a release from their present contracts. This has delayed us somewhat, but we hope soon, etc."

* * *

THE Peoria Rubber and Manufacturing Co. (Peoria, Ill.), who will manufacture bicycles and bicycle-tires, have placed their order with The Lodge & Davis Machine Tool Co. (Cincinnati, Ohio) for the entire equipment of the plant, including engine-lathes, milling-machines, shapers, drills, screw-machines, and hub-machines. The estimate for next year's output of the new factory is 15,000 bicycles.

MR. MAGOWAN AGAIN IN CONTROL.

AT Trenton, N. J., on September 25, Vice-Chancellor Bird dismissed the receivers appointed for the Eastern Rubber Manufacturing Co. and the Trenton Rubber Co. on August 3, during the absence of ex-Mayor Frank A. Magowan from the city. In making the motion for the dismissal of the receivers, City Solicitor Edwin Robert Walker, counsel for Mr. Magowan, stated that Trenton's former mayor had paid off all the small creditors of the two big concerns, and that the larger creditors had signed a petition to the court praying that the management of the two companies be again placed in the hands of the hustling young millionaire. Mr. Walker also assured the court that the companies would give the creditors notes for four, eight, twelve, and twenty-four months for their claims, 25 per cent. to be payable in the first quarter.

Lawyer James Buchanan, representing Bernstein & Co., of New York, who filed the bill asking for the appointment of a receiver against the Trenton Rubber Co., had no objection to the dismissal of their bill, and was glad to have Mr. Magowan again in control. Judge W. M. Lanning, for ex-Tax Receiver Mahlon R. Margerum, who filed the bill against the Eastern Rubber Manufacturing Co., expressed the same sentiment.

The court made the order and the receivers were discharged. The receivers reported to the court that both concerns have been running steady under their charge, and they also report that they have received orders averaging $2000 a day.

Mr. Magowan gave out a statement in which he says he now becomes practical owner of both concerns, he absorbing nearly all the stock. He also controls the Trenton Oil Cloth Co. and owns the Empire Rubber Co. He says the mills will run night and day, on a cash basis, in future. Mr. Magowan has practically controlled the mills during the incumbency of the receivers.

INDIA-RUBBER INDUSTRY IN EUROPE.

THE United Berlin and Frankfort India Rubber Co., Limited, of Germany, have filled an order from the great Krupp gun factory for spiral-wound rubber hose, for hydraulic purposes, having an interior diameter of 18 inches. This hose was tested to 120 pounds per square inch. The same company devote their attention to products relatively so insignificant as football-bladders. By the way, they have established an agency in London, at 31 Basinghall street.

=The interest in rubber tires in England shows no diminution, forty-nine applications for tire patents having been reported for August. It is stated that when books were opened recently for subscriptions to the shares of a new tire company capitalized at £25,000, bids were received amounting to £43,000.

=R. & J. Dick, of Glasgow, Scotland, have been prosecuting an action against John Tullis & Son, of the same city, for alleged infringement of their patent (No. 12,254 of 1885) on Gutta-percha belting. In the testimony it was brought out that in 1887 the production of Dick's patent belting was about $25,000, while last year it just touched $460 000 in value.

=The most remarkable feature in the India-rubber statistics of Great Britain, according to the *India-Rubber and Gutta-Percha Trades Journal*, has been in the decline in value of the rubber imported from the United States—from an average of 25 5-7 *d.* per pound in 1891 to an average of only 10 1-7 *d.* per pound last year. According to our contemporary, "this, no doubt, is partly accounted for by the quantity of devulcanized rubber which is manufactured in the United States and brought to England."

=The Stanley Show, one of the great yearly bicycle exhibitions in England, will be held at the Royal Agricultural Hall, Islington, London, on November 22-30. A special section has been set apart for vehicles fitted with pneumatic tires. The secretary is E. A. Lamb, No. 57 Chancery lane, London, W. C.

=The British patents on the "American ball-nozzle" have been acquired by the British-American Ball Nozzle Co., organized with $800,000 capital, for the purpose of placing on the markets of Great Britain the fire-nozzles, lawn-sprinklers, carriage- and window-cleaners, syringes, atomizers, etc., at present manufactured in this country under the ball-nozzle patents. The ball-nozzle has been adopted by the fire-departments of New York, Boston, Philadelphia, and many smaller cities, and by the war and navy departments of the United States.

=At the recent semi-annual meeting of directors of the North German Rubber factory (formerly Fonrobert & Reimann), at Berlin, it was reported that the business for the first half of 1895 had showed a profit 60 per cent. greater than for the same period in last year. This improvement in business is expected to continue through, the sales for July having been 40 per cent. more than for the same month one year ago.

=Mr. Otto Traun left New York early last month for a tour around the world, and is now in Japan. He is a son of Dr. Heinrich Traun, of the Harburg Rubber Comb Co., and was mentioned in this paper more than a year ago as having become connected with a New York firm in order to study business methods in America. He has since been in Brazil, and his present tour is expected to familiarize him with business opportunities in Asia.

=The Parisians above all others are great users of elastic webbing in shoes. The shoes, to be sure, are gotten up with a great deal more taste than those of American make, as they are ornamented with foxings, scalloped leather, etc. This fad is one that makers of rubber thread or goring will be in full sympathy with.

NEW TRADE PUBLICATIONS.

ONE might be quite well acquainted with the India-rubber trade and yet find something new in the 1895 catalogue of J. H. Kohmescher & Co., proprietors of "The Rubber Store," in Cincinnati. It is a well-printed book of 259 pages, just from the press, and containing a list of rubber goods sold at wholesale and retail by the firm named. There are nearly 800 illustrations in the book, of surgical rubber goods, articles of clothing and for the toilet, mechanical goods, and so on, each item being accompanied by the appropriate prices. Doubtless many persons will find the perusal of this book more satisfactory than a visit to a rubber store, where, in the multiplicity of items, one may become confused, and thus overlook a desirable article which this illustrated catalogue would call attention to. Such a book is also calculated to extend such a mail trade as Messrs. Kohmescher are building up.

=The New Brunswick Rubber Co. (New Brunswick, N. J.) have issued a catalogue and price-list for 1895–96 that is notable for the success which has been attained in illustrating the company's styles of boots and shoes through the aid of photography—this being the basis of the "half-tone" engraving process. There is no exaggeration, no glossing, no misrepresentation when you photograph a thing—whether a man's face or his rubber boots. There are thirty-five styles pictured in this catalogue, with suitable descriptive matter and prices beneath each engraving. At the end of the pamphlet comes a complete list of prices, with a conveniently-arranged discount-list. New Brunswick "seconds" are branded "Essex," and are manufactured in a full line. Attention is called at the beginning of the catalogue to the fact that the company began making rubber shoes in 1849.

=The Indiana Rubber and Insulated Wire Co. (Marion, Ind.) have issued their 1896 catalogue of pneumatic cycle-tires, in a style that would do credit to any firm in the business. Their factory at Jonesboro, Ind., is said to have facilities for the coming year more than double those of 1895, and an advantage is claimed from "the privileges of natural-gas fuel, free water, and light taxes." The styles of tires catalogued are the Duryea detachable tires, single- and double-tube; the "Paranite" cemented tires, single- and double-tube; and the "Electric" double tube cemented tires. The same air-tubes are used in all the double-tube tires, being made with reinforced "pinched" ends. Several pages in the catalogue are devoted to tire-repairs.

=A very pretty game counter made of white celluloid upon which a record of both games and points may be shown is a token the Tyer Rubber Co., of Andover, have been sending out.

CATALOGUES RECEIVED.

ARLINGTON U. BETTS & CO., Toledo, Ohio=Catalogue and Price-List No. 11, for 1895. ["Red Cross" Rubber Cement and Bicycle Specialties.] 16 p.

T. S. Buck, No. 125 Worth street, New York=Catalogue [of patent flexible hand stamps, rubber type, price-ticket figures, etc]. 54 p.

Lovell Manufacturing Co., Limited, Erie, Pa.=Catalogue [of Clothes-Wringers and hardware and household specialties; also, supplementary catalogue]. 80 p.

The American Dunlop Tire Co., New York=[Illustrated description of the Dunlop bicycle-tire.] 16 p.

Morgan & Wright, Chicago, Ill.=Morgan & Wright Quick-Repair Tire. [Liberally illustrated description.] 24 p.

The L. Candee & Co., New Haven, Conn.="The Danger of Being Too Funny; or, The Overthrow of Si. Jenkins and Jed. Jones." [Amusing advertising novelty, in verse and pictures.] 6 p.

American Wringer Co., No. 99 Chambers street, New York="The Wring of Sense" [a booklet describing wringer-rolls]; also seven leaflets descriptive of clothes-wringers.

RUBBER-MEN AT GLOUCESTER.

IN the September INDIA RUBBER WORLD, under the heading "Entertained by the Firm," was a description of an exceedingly pleasant outing that took place on the last day of August at Gloucester, Mass. The officers of the Boston Woven Hose and Rubber Co. at that time invited their entire selling force to an up-to-date picnic. It goes without saying that the fishing and bathing, and the dinner, with its speeches and songs were exceedingly enjoyable. Last month we were unable to do more than give the names of those who participated in this most enjoyable occasion. This month, however, we can do better and are very glad to present a fine photograph of the jolly company gathered on the steps of the Bass Rock House at Gloucester.

To many in the trade it will be unnecessary to give the names of the individuals in the group. At the same time, that the article and the picture may both be complete, we give again the list of the participants. There were present J. Edwin Davis, treasurer and manager; Robert Cowan, superintendent; Willis A. Darling, sales-agent; Charles H. Tile, Charles E. Weaver, E. H. McCall, J. O. DeWolf, E. E. Buckleton, B. F. Clifford, W. F. Robinson, H. F. Hering, G. L. Sullivan, F. W. Brown, F. Schwartzkopf, R. F. Hayes, F. D. Hamilton, W. P. Winslow, C. S. Way, E. B. Davidson, G. C. Fiske, A. P. Spear, and J. H. Mullen.

A LARGE INCREASE OF CAPITAL.

AT a called meeting of the stockholders of the Peerless Rubber Manufacturing Co. (New York), on October 3, it was voted to increase the capital stock of the corporation from $75,000 to $300,000. The total number of shares is to be 3000, of the par value of $100 each. This action has been taken on account of the steady growth of the business of the company, which is stated to have increased from a total of $40,000, in 1889, to a volume which promises to exceed $750,000 during the present year. The Peerless Rubber Manufacturing Co. are a close corporation, consisting since last spring of only eight stockholders, and this number is not increased in the large addition to the capital stock. Nor is any change in the *personnel* of the company involved. Some important additions to the company's plant are now in progress, and it is their purpose, in the near future, to erect an additional plant in some western town, in recognition of the growing importance of the western centers of distribution of the class of goods manufactured by this concern, and the economy of producing goods as nearly as possible to the source of demand.

The Peerless Manufacturing Co. dates back about eighteen years. In 1888, the date of incorporation, the name was changed to the Peerless Rubber Manufacturing Co. The founder was E. L. Perry, who is still superintendent of the company's factories.

TRADE AND PERSONAL NOTES.

THE Metropolitan Rubber Co., whose factories are at Wallingford, Mass., were among the first of the industrial concerns in that town to signify their intention of closing on September 19, which was made a general holiday on account of the local agricultural fair.

=The Columbia Rubber Co. (Boston) have received orders and measurements for fifty mackintoshes for as many policemen in Atlanta, Ga., it being understood that, if the garments prove satisfactory, the whole police force is to be equipped in the same manner.

=The Mansfield (Ohio) Elastic Web Co., established in 1890, are reported to have had a successful career, finding a ready market for their suspender-web, which is now produced at the rate of 75,000 yards per week. One-fourth of this product is disposed of to local suspender-factories. The works are run on full time and sixty operatives are employed. They are now owned by A. B. Martin, of Mansfield, manager of the business, and Thomas Martin, of Chelsea, Mass.

=The Boston Rubber Shoe Co. are said to pay $7000 yearly in taxes on their factory at the Edgeworth Fells, being more than is paid by any other concern in the town.

=The Reading Rubber Manufacturing Co. declared this year a 6-per-cent. dividend, payable on and after September 10, to holders of record of September 8.

=The Woonsocket Rubber Co. were sued by Peter Bjbjian for damages for injuries received while at work in their mill at Woonsocket, resulting in the loss of one arm and the injury of the other. The verdict of the jury was in Bjbjian's favor with an award of $6400. An appeal was made, but the higher court has sustained the verdict, refusing to admit that negligence had been shown by the plaintiff while at work.

=Mr. and Mrs. George W. Perry, at their residence, No. 5355 Vernon avenue, St. Louis, on the evening of September 3, delightfully entertained the house and traveling force of George W. Perry & Co., the St. Louis agents of the American Rubber Co.

=Kirk Brown, general manager of the American Dunlop Tire Co. (New York), started on September 10 on a business tour of two months or more, to extend perhaps to the Pacific coast. It was a mistaken report that the company had decided to remove their factory to some point where rents are cheaper than in New York city.

=The L. Candee & Co. (New Haven) are extending their rubber plant, and expect to put in a new 800-horse-power boiler, with a smokestack 100 feet high. They were too busy with orders to give their employés a holiday on Labor day.

=The large factory of the Middlesex Last Co. (Malden, Mass.), who make a specialty of the manufacture of lasts for rubber footwear, was lately destroyed by fire, the loss being estimated at $25,000. It is understood that the works will at once be rebuilt.

=The Canadian Rubber Co. of Montreal made a display of their products at the recent Toronto industrial exposition which was considered one of the finest in the main building. It was contained in a handsome pavilion, on the ground floor, lighted at night by electricity.

=Several rubber-men have recently become members of the New York Hardware Club, including Charles L. Johnson, secretary of the United States Rubber Co.; Charles H. Dale, president of the Peerless Rubber Manufacturing Co.; and S. Y. l' Hommedieu, treasurer of the Columbia Rubber Works Co.

=Jennings, Lacy & Co. have become incorporated, at Saginaw, Mich., to continue the business in shoes and rubbers of Jennings & Co., of that town. The paid-up capital is $32,000, of which S. W. Jennings holds 1500 shares.

=The Franklin Manufacturing Co. Limited (Franklin, Pa.), have been incorporated to manufacture asbestos stove-mats and other specialties, with $2000 capital.

=The new machine-shop for The Granger Foundry and Machine Co. (Providence, R. I.) will be one of the largest and most complete in the New England states. The building was designed and built by The Berlin Iron Bridge Co. (East Berlin, Conn.) and is 110×306 feet. The construction is similar to the Fuller Iron Works machine shop, designed by the same parties, and which has been before illustrated in this paper.

=The Manhattan Rubber Manufacturing Co.'s factory at Passaic, N. J., is to be equipped with telephones of the Clamond system—a French invention.

=The Hartford Rubber Works Co., it is announced, are preparing to bring suit against several concerns for alleged infringement of their single-tube bicycle tire patents. They claim that Boothroyd, an Englishman, first began the manufacture of single-tube tires on the other side, and that they (the Hartford company) negotiated with Boothroyd for patenting his tires in America. They then learned that the latter's claims were broadly covered by the patents already issued to P. W. Tillinghast, which patents the Hartford company purchased, becoming sole owners of the right, it is claimed, to manufacture single-tube tires in this country. The B. F. Goodrich Co. (Akron, Ohio) have taken out a license for manufacturing tires under the Hartford company's patents.

=The Fairfield Rubber Co. (Fairfield, Conn.) have recently overhauled their engine-room, including the rebuilding of the masonry, with the effect of making the whole much more substantial. They are reported as having a good list of orders in hand, and prepared to run full for some time to come.

=The Boston Rubber Shoe Co., at a recent meeting of the Malden (Mass.) board of aldermen, were given permission to erect two new buildings, at a total cost of $4500.

=The Rubber Tire Wheel Co. made a noticeable display of tires at the Ohio state fair, at Springfield. A local carriage-manufacturer of prominence exhibited five of his finest vehicles equipped with these tires.

=Mr. R. F. Sears writes to his friends from Pará that he has entirely regained his health. Certainly his latest photographs do not appear to be those of a man who was so dangerously ill a few months ago. Mr. Sears expects to be in New York again during next month.

=L. Blumenthal & Son, of Detroit, Mich., in January, 1893, offered to Lowenthal & Morganstern, of New York, by telegraph, a lot of old rubbers, for immediate delivery. The offer was accepted, with the request that the rubber be held for a short time. The sellers, however, being without storage-room, disposed of the lot to other parties, and so notified Lowenthal & Morganstern. The latter therefore brought suit to recover $1625—the difference between what they promised to pay, and what they could have sold the rubber for later. The case has just been decided in favor of the defendants, the court holding that no sufficient contract existed upon which to base an action.

=The Commonwealth Rubber Co. (New York) claim for their Astor House store that, for its size, it is the finest retail rubber store in New York, and does the biggest business.

=C. L. Higgins, of the Hudson Bay Knitting Co. (Montreal), who has recently produced several inventions in the line of India-rubber footwear, has been spending some time in Boston and vicinity.

=W. D. Allen & Co. (No. 151 Lake street, Chicago) are well known as large manufacturers of a variety of first-class piston packings. It is perhaps not as well known, however, that they have a department for making all kinds of piston packings to order. That is, with their braiding and weaving machines and other appliances, they are in a position to make packings for small manufacturers of almost any materials, and at very reasonable figures.

=William Lincoln Sage (Boston) is justly proud of the fact that last month he shipped 10,000 cases of goods, which is his largest month's work yet, both in number of cases and in amount of sales.

=The caller upon Henry F. Knowles (No. 111 Congress street, Boston) cannot fail to be struck with the vast improvement over his former quarters at No. 49 Federal street. At the new place there is ample office-room, entirely isolated from the stock-room. There are five windows running from floor to ceiling and which are in an admirable position for the display of goods. Last, but not least, is a light, airy basement, 125 × 30 feet in dimensions, which gives the best possible storage room for the variety of goods that Mr. Knowles carries. This basement has its own elevator which is a most decided help in the handling of mechanical goods.

=Lewis Gillette, manager of the clothing department of the American Rubber Co., summarizes the mackintosh business very well when he says: "The golf-hood has disappeared and orders are pretty well divided between two-cape and three-cape garments. I believe, however, that the two capes are more popular. There is, also, a decided call for ladies' silk-lined garments, which are very handsome and are put upon the market at very reasonable prices."

=The Kleinert Rubber Co., College Point, Long Island, have recently doubled the size of their factory.

=The very attractive advertisements that have appeared during the last six months exploiting the goods of the various companies that go to make up the United States Rubber Co. were designed by John P. Lyons, who has full charge of their advertising.

=The corporation of Theo. Pabst Co. has been dissolved and Mr. H. G. Ramsperger has transferred to his own firm the business of the Theo. Pabst Co., which is continued without interruption under the name of H. G. Ramsperger & Co. at No. 180 Pearl street, New York.

=The death of "Roy" Welling (Trenton) was a shock to a host of friends. He was a most delightful, gentlemanly young man, and one of the last in the world to be suspected of melancholia.

=Mr. Wm. T. Baird, Sec. of the N. Y. Belt'g & Pk'g Co., has returned from his vacation in the Adirondacks as brown as an Indian. While there he shot two fine deer.

=Hon. F. A. Magowan (Trenton) is again at the helm, is working night and day with all of his old time vim and hustle.

=W. R. Brixey, manufacturer of insulated wire, is making at his factory at Seymour, Conn., more goods than have ever before been turned out month for month, and the contracts continue to come in.

=Mr. Thos. P. Hines, Providence, R. I., has opened on his own account a rubber store in New Bedford, Mass., that will be known as the New Bedford Rubber Co. Although Mr. Hines is manager of the Hope Rubber Co., of Providence, the two stores are entirely distinct enterprises.

=The Eureka Fire Hose Co., of New York, request that the readers of THE INDIA RUBBER WORLD take note of the fact that S. C. Secklemen of Bethlehem, Pa., was dismissed from their employ July 1, 1895.

=Mr. Frank E. Hall, manager of the Ireson Rubber Co. (Boston), reports with great gusto that he has just received his fourth order from a large rubber factory for "Blue Blood" packing, and further than this that he is willing to sell every rubber mill in the country, no matter whether they manufacture packings themselves or not.

=Mr. Wheeler Cable, president of the Cable Rubber Co. (Boston), is the inventor of a fish-hook that is finding great favor among fishermen. It is so made that no matter what the cast is, it lands point upward and can be dragged through lily-pads, pickerel weeds, or any such obstructions without fouling, which is indeed a valuable feature.

=The Cable Rubber Co. (Jamaica Plain, Mass.) are adding to their plant a new heater building, 40 × 40, of brick, and are, also, raising up the old heaters in the rear of the plant so that they are on a level with the rest of the buildings.

=N. Lincoln Greene, of the Boston Rubber Co., has just returned from a seven weeks' trip in which he went as far as Omaha. He describes the fall trade as a trifle slow but growing better all the time.

=The Boston Rubber Co. closed their works at Franklin, Mass., on October 1 and 2, for the usual quarterly inventory of stock.

=The Columbia Rubber Co. are fitting up a new drying-house at their factory at Braintree, Mass. Business is reported very brisk with them.

=The Conant Rubber Co. (South Framingham, Mass.) have set their machinery in motion and have been busy for several days past in getting out samples.

=The Columbus Rubber Co. (Columbus, Ohio) have been awarded a $4000 contract by the local fire-department for "2½-inch, three-ply, solid-woven, rubber-lined, cotton fire hose."

=Watertown, N. Y., has a live firm of jobbers in rubber footwear exclusively—Taylor Brothers—who during the past four years have built up a large trade in the northern part of the state. Their specialty is the Boston Rubber Shoe line of goods. Mr. B. H. Taylor, a member of the firm, spent the early part of the month in New York city, reporting a satisfactory condition of trade in his section. The other member of the firm is a son-in-law of ex-Governor Flower.

=Spencer R. Driffield, secretary and treasurer of the large rubber firm of the W. H. H. Peck Co., of Cleveland, Ohio, was in New York recently, for the third time this year. He usually makes but two visits to the metropolis in a year, but this extra visit is to be attributed to the growing volume of the rubber trade in the Cleveland district. The hose trade has been stimulated by the great amount of dry weather this year, and the demand for mechanical goods in general has grown with the steady increase in manufacturing in Ohio. The present season has been marked by the largest orders on record for rubber footwear, one feature of interest being the increase in the sales of rubber boots. The Peck company carry a full line of rubber goods.

=The manufacturing plants of the New Brunswick Rubber Co. and the Jersey Rubber Co. have been consolidated. A part of the machinery and most of the operatives of the former company will be transferred to the plant of the later, both plants being located in the same town—New Brunswick, N. J. The object aimed at is increased economy of production, and no change will take place in the New Brunswick line of goods, or in the selling arrangements.

AFFAIRS OF ALFRED W. FITZ.

A PETITION has been filed in the courts to have Alfred W. Fitz, of Chelsea, Mass., declared insolvent. Mr. Fitz has been mysteriously absent from his home since August 12, on which day he left on business for New York city. He was son-in-law of the former president of the Chelsea Wire Fabric Rubber Co.—Thomas Martin—and for four years past had filled the office of treasurer of that corporation. The management of its affairs was left entirely in his hands, and his reports to the stockholders were received without question and were regarded as wholly satisfactory. Since the disappearance of Mr. Fitz an examination of the books of the company shows a mixed condition of the accounts, and a larger indebtedness than was thought to exist, but no suggestion of embezzlement has been heard. The insolvency of Mr. Fitz is a cause of surprise to the community, where he was supposed to have considerable private means.

Judge Albert D. Bosson, of Chelsea, is the petitioner, and the specific debt for which the petition is brought is that of a note given by Fitz, July 8, to the First National Bank of Chelsea for $1000, which fell due September 8. It is signed "Chelsea Wire Fabric Rubber Co., Alfred W. Fitz, treasurer," and is indorsed by the Chelsea Wire Fabric Rubber Co., Alfred W. Fitz, treasurer, as well as by Mr. Fitz personally, and by Charles H. Lovett. The rubber-works have been shut down pending an investigation of its affairs.

* * *

A CORRESPONDENT of the Boston *Advertiser*, noting the published statements that Mr. Fitz has not been shown to be a defaulter, that he has not taken any money from the company, that he owes it nothing,—except as an indorser, with the other directors,—that the books of the company had never been audited, that he had put $5000 into the company and lost it, and that he has been petitioned into bankruptcy on paper which he had indorsed for the company, goes on to say:

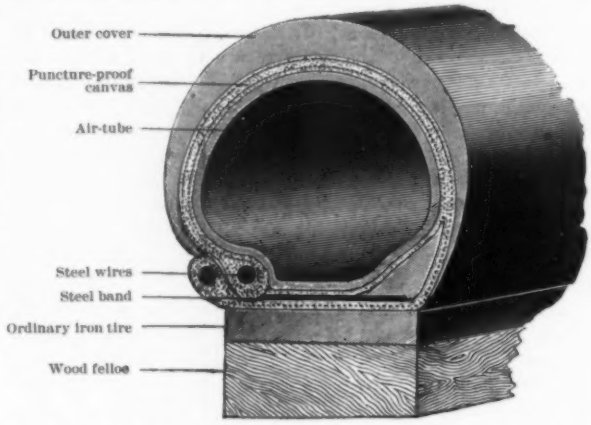
"As I read these statements, the impression that is made on my mind is that Mr. Fitz was a young man without business experience when he took the management of that company, that he represented to the directors from time to time that the company was making money, and must have thought so himself or he would not have indorsed the company's paper to the amount of $60,000, which did not benefit him but was simply to help the company he was managing, and that he risked his own money, his own credit, and his name, to help the company, and when he found that the company was insolvent, he was so overwhelmed that he could not face it and disappeared.

"I have been informed that Mr. Fitz's head was injured by the railroad accident (for which he recovered $12,000) which perhaps made him irresponsible to a certain degree, and when a young man has had such an accident, and has backed his judgment on the company of which he was treasurer making money by his personal indorsements on its paper, for which he must now lose a large portion of the money that was left him by his father, he is a young man to be pitied as much, perhaps, as blamed."

WHILE on a vacation trip recently one of THE INDIA RUBBER WORLD men called at the factory of the New York Rubber Co., at Mattewan, N. Y. As it was a little early in the day for Superintendent Ryder, he was conducted through the factory by Mr. Judson. Mr. Judson, by the way, is a veteran in the rubber trade. He admits being sixty years of age and says that he has been at work since he was sixteen in the India-rubber business.

PNEUMATIC TIRE ADAPTABLE TO ANY RIM.

TO a question why rubber vehicle-tires had not become more generally used in America, a rubber-man replied that it was chiefly a matter of expense. A considerable part of the expense, in the case of every style of tire brought out hitherto, has been in the construction of special wheel-rims, or in the conversion of wheels already in use for the reception of the rubber tire. To overcome this class of difficulties has been the object of an English inventor, whose work has resulted in a double-tube pneumatic tire for cabs or carriages, applicable to any rim, without alteration. There is no special form of rim needed, but only the customary iron or steel tire, outside of which the rubber tube is mounted, the device for holding it in place being simple and easily operated. These tires are constructed with a flat steel band encased in the tire-cover on the side which comes in contact with the wheel-rim, the ends of the band over-lapping and being securely locked together around the wheel by means of a screw. To this device is attached a bolt which goes through the felloe, receiving a nut on the inner side of the felloe. The whole device for attaching the tire is invisible when in use except the small nut. On the opposite side of the circumference of the wheel the tire valve is placed, piercing the felloe, and this also becomes a means of preventing the tire from slipping off. In addition to producing a tire to fit any rim, the inventor has sought, as far as possible, to produce a punctureless tire. This has been attempted through the use of a specially-woven fabric for the outer tube, or shoe. Then, in order to prevent possible injury to the air-tube in removing or replacing the tire, it is encased in a special sheathing of fabric. Finally, the new tire is offered on the claim that should it happen to become deflated, its construction as a whole is such that it would serve as a cushion tire, enabling a cab to finish a journey without the usual inconveniences resulting from a punctured pneumatic tire. Within a few days past a patent has been allowed for it in the United States, where its interests are represented by Gerald Jordens, No. 69 West Forty-ninth street, New York, who will exhibit it at the Cleveland meeting of the Carriage Manufacturer's Association, on October 15–17 next.



THE Jos. Dixon Crucible Co. (Jersey City, N. J.) now have their rubber plant for making erasers in full operation and make all their own goods in this line. They paid a well-known expert machinist and rubber-manufacturer a goodly sum to start them right, and he did it so well that they have made money on the plant from the first.

REVIEW OF THE INDIA-RUBBER MARKET.

AN advance in the price of crude Pará rubber is to be reported, the upward tendency in quotations, still in progress at the time of printing this journal, having existed for the past three weeks. At the beginning a sympathetic tendency in the same direction was manifested in other grades, but prices of Centrals and Africans now seem disposed to return to their former level. There has been no change in the conditions of rubber-manufacture or general business since our last report that could have the effect of advancing prices of crude rubber, for which reason the inference seems plain that the market is being affected by speculative influences —an element which has been absent from the trade for a long time.

The latest quotations in the New York market are:

Pará, fine, new t a...	77	@79	Benguela.....	48½	@49
Pará, fine, old.....	83	@84	Congo Ball....	36	@40
Pará, coarse, new t a	49	@59	Cameroon Ball.....	38	@39
Caucho (Peruvian) strip	47	@48	Flake, Ord and Lump..	24	@25
Caucho (Peruvian) ball	54	@55	Accra Flake.....	15	@18
Mangabeira, sheet....	40	@43	Liberian Flake	26	@27
Esmeralda, sausage..	53	@54	Primest Pinky Madr...	58	@60
Guayaquil, strip.....	36	@45	Madagascar, black..	43	@45
Nicaragua, scrap	52	@54	Borneo.....	26	@
Nicaragua, sheet....	50	@51	Gutta-percha, fine grade		1.30
Thimbles.....	34½	@35	Gutta-percha, medium..		1.00
Tongues.....	36	@39	Gutta-percha, hard white		85
Sierra Leone.....	25	@42			

PRICES FOR SEPTEMBER (ISLAND RUBBER).

	1895.		1894.		1893.	
	Fine.	Coarse.	Fine.	Coarse.	Fine.	Coarse.
First	73½	48	67	45	66	43
Highest.....	76	49	68	46	71	49
Lowest.....	73½	48	66	44	66	43
Last	76	49	68	46	70	49

The statistical position of Pará rubber in New York and elsewhere is as follows, the figures expressing tons of 1000 kilograms:

	Fine and Medium.	Coarse.	Totals.		Totals 1894.
Stock, August 31	198	36	234	=	992
Arrivals, September.....	418	177	595	=	606
Aggregating.....	616	213	829	=	1598
Deliveries, September.....	454	185	639	=	634
Stock, September 30.....	162	28	190	=	964

	1895.	1894.
Stock in England, September 30...	755	755
Deliveries in England, September.....	650	490
Pará receipts, September..	1320	1300
Stock in Pará, September 30.....	323	330
World's supply September 30 (excluding Caucho)..	2034	3170
Pará receipts since July 1.....	3280	3170

In connection with these statistics it is of interest to note that the prices we quoted one year ago were 68 @ 70 for fine new Pará and 72 @ 74 for fine old.

In regard to the financial situation, Messrs. Simpson & Beers, brokers in crude India-rubber and commercial paper (New York), advise us as follows:

"A feature in September has been the marked increase in the offerings of commercial paper in general, and the disinclination on the part of most of our city banks to invest in it, owing largely to the increased demands of their dealers and correspondents. We quote strictly first-class receivables at 5 per cent., single-name paper at 6 per cent., all from four to six months to run. Out-of-town banks have been buyers only to a moderate extent."

The rubber market in England during September was more active, and a considerable amount of rubber was delivered to manufacturers, while the shipments to America included 125 tons of fine Pará. The sales of rubber for future delivery have been few, the demand being for spot rubber to cover immediate requirements.

Rubber factories throughout England are worked at their full capacity, some even with increased force, to fill the orders for the winter trade, where this has not already been done. Business throughout Great Britain has improved in general including the export trade, and even if business is not as flourishing as might be wished, a feeling of confidence has taken possession of the business world. The from-hand-to-mouth policy has disappeared from most branches of industry and the spirit of speculation has begun to assert itself. The principal sales in England during September were:

220 tons Fine Pará, 36 3/4@39*d*.
55 " Prime Buttons, 1/9½@1/10½.
56 " Thimbles, 1/4¼@1/4½.
35 " Benguela Niggers, 1/10¾@1/11.
107 " African Strip, 1/10½@1/11.
12 " Penang, 1/5@2/3½.
10 " Gaboon Ball, 1/7.
12 " African Biscuit, 1/8½@1/9.
15 " Accra Strip, 2/-@2/0½.
40 " Lagos, 1/4½@1/4⅝.
2½ " Cameroon, 1/6@1/6¼.
7 " Small Ball, 1/4½@1/5½.
50 " Peruvian Slab, 1/9¼@1/9½.

The following quotations are reported by mail from Liverpool, for medium sorts:

Congo ball.....	1/9½@1/10	Cameroon Ball....	1/6¼@1/6½
Gaboon ball.....	1/7 @1/7½	Cameroon Clusters	1/8½@1/9
Small tongue.....	1/3	Batanga Ball	1/6¼@1/6½
Bold tongue	1/5¾@1/6	Old Calabar	1/5@1/5½
Flake.....	11*d*	Sierra Leone Niggers.....	1/1 @2/1
Lump Flake.....	11½*d*	Gambia Niggers, prime.....	2/0½
Small ball.....	1/4½@1/5½	Gambia Niggers, low to fair.....	1/0 @1/9
Thimbles..... ...	1/4½@1/4¾	Addah Niggers ...	1/6½@1/7
Cape Coast and Saltpond.....	1/1 @1/3	Benguela Niggers..	1/10¼ f.o.b.
Accra strips.....	2/1	Loanda Niggers...	2/5½
Accra biscuits, best quality.....	1/11	Manoh Twists	2/2½
Accra Common Soft	1/1	Mangabeira.....	1/6 @1/7½
Accra Paste.....	8*d*@9*d*		
Axim and Assinee.	1/5½@1/6		

Receipts of Congo rubber at Antwerp have shown an increase this season over former years, but the constant takings at the sales leave very light stocks all the while. There are recent reports of sales of Kassai black as high as 53.4 cents per pound.

The market for Chicle is reported by the Seeger & Guernsey Co. (New York) as follows: "The stock in first hands here is smaller than at any previous time, and is estimated at a little over 300,000 pounds. Arrivals during September were 60,000 pounds, and the sales during the same month amounted to some 200,000 pounds, the greater part of which was sold at 40 cents a pound. There is considerable inquiry now for old-crop gum, which the holders are not offering for sale. The new has been taken up at 42 cents when obtainable at that price, and some small sales of old gum have been made at 45 cents. There was very little rain in Mèxico during the rainy season just closing, until the middle of September. The future of the market, of course, depends upon the arrivals between now and the end of the year, but it appears quite certain that the crop will be quite as short as last year's, and perhaps shorter."

IMPORTS FROM PARA.

THE receipts of India-rubber direct from Pará and Manáos at the port of New York since our last publication are reported in detail below, the figures referring to pounds:

September 15.—By the steamer *Clement*, from Pará:

	Fine.	Medium.	Coarse.	Caucho.	Total.
New York Commercial Co.	42,900	8,200	25,800	32,200	=109,100
Reimers & Meyer	175,000	44,300	72,000	9,800	=301,100
Lawrence Johnson & Co.	32,800	5,400	29,400	18,600	= 86,200
Totals	250,700	57,900	127,200	60,600	=496,400

September 23.—By the steamer *Origen*, from Manáos and Pará:

New York Commercial Co.	69,100	23,200	36,900	1,900	=131,100
Reimers & Meyer	69,200	32,300	63,100	300	=164,900
Boston Rubber Shoe Co.	42,200	3,400	7,400	.....	= 53,000
Lawrence Johnson & Co.	34,800	8,000	10,900	600	= 54,300
Otto G. Mayer & Co.	...	8,200	34,200	.....	= 42,400
Shipton Green	17,900	700	3,800	.....	= 22,400
P. Lima	1,300	.....	600	.....	= 1,900
Totals	234,500	75,800	156,900	2,800	=470,000

September Imports from Pará	1,335,900
August from Pará	766,500
July Imports	666,200
June Imports	1,030,100
May Imports	1,651,400

PARA IMPORTS VIA EUROPE.

September 1.—By the steamer *Umbria*, from Liverpool:

Reimers & Meyer (Fine)	34,000

September 4.—By the Steamer *Aurania*, from Liverpool:

Reimers & Meyer (Coarse)	25,000

September 9.—By the Steamer *Cevic*, from Liverpool:

New York Commercial Co. (Fine)	13,000

September 16.—By the steamer *Tauric*, from Liverpool:

Otto G. Mayer & Co. (Fine)	15,200
R. F. Downing & Co. (Coarse)	7,000

September 19.—By the steamer *Germanic*, from Liverpool:

Otto G. Mayer & Co. (Fine)	3,500

September 23.—By the steamer *Nomadic*, from Liverpool:

Reimers & Meyer (Fine)	5,000

September 25.—By the steamer *Teutonic*, from Liverpool:

Reimers & Meyer (Fine)	42,000

September 30.—By the steamer *Georgic*, from Liverpool:

Reimers & Meyer (Fine)	23,000
Reimers & Meyer (Coarse)	56,000

OTHER NEW YORK ARRIVALS.

BELOW will be found in detail the imports at New York during September, 1895, of India-rubber from Mexico, Central America, and South America, other than Pará grades; also, arrivals at New York of African and East Indian sorts:

CENTRALS.

	POUNDS.
SEPT. 1.—By the *Finance*=Colon:	
A. Santos & Co.	3,800
W. R. Grace & Co.	5,000
Flint, Eddy & Co	3,100
George R. Cottrell & Co	2,593
Piza, Nephews & Co.	1,717
Total	16,212
SEPT. 3.—By the *Alleghany*=Port Limon:	
A. P. Strout	9,000
G. Amsinck & Co.	3,500
A. M. Capen's Sons	1,000
Munoz & Espriella	800
A. N. Rotholz & Co	700
H. W. Peabody & Co	200
Total	15,200
SEPT. 3.—By the *Wylo*=Greytown:	
A. P. Strout	6,000
G. Amsinck & Co	700
K. Mandell & Co	300
G. R. Cottrell & Co.	200
Total	7,200
SEPT. 4.—By the *Seguranca*=Mexico:	
Hughes & Co	600
H. Marquardt & Co.	500
Graham, Hinckley & Co.	200
F. Probst & Co	200
Jose Agostini	200
Total	1,700
SEPT. 4.—By the *El Sid*=New Orleans:	
Earle Brothers	5,500
SEPT. 5.—By the *Galileo*=Bahia:	
Reimers & Meyer	14,000
SEPT. 8.—By the *Gulf of Akaba*=Trinidad:	
Flint, Eddy & Co.	1,000
SEPT. 9.—By the *Prince Fred Hendrick*=Trinidad:	
Thebaud Bros.	6,500
SEPT. 9.—By the *El Norte*=New Orleans:	
F. H. Robinson	4,000
SEPT. 9.—By the *Newport*=Colon:	
Jacobo Baiz	5,288
G. Amsinck & Co	1,034
Elmenhorst & Co.	828
Roldan & Van Sickle	818
Ellinger Bros.	596
W. Loaiza & Co	524
Flint, Eddy & Co	510
A. N. Rotholz & Co.	258
A. P. Strout	250
Eggers & Heinlein	228
—— Boyle	200
E. R. Cottrell & Co.	180
Total	10,813
SEPT. 12.—By the *Kaffir Prince*=Bahia:	
New York Commercial Co.	4,800
SEPT. 11.—By the *Alliance*=Colon:	
A. Santos & Co.	12,330
Flint, Eddy Co.	7,800
W. R. Grace & Co.	6,938
G. Amsinck & Co	6,575
Roldan & Van Sickle	3,934
Hirzel, Feltman & Co.	3 883
A. M. Capen's Sons	3,177
I. Brandon & Bros	2,976
Dumarest & Co	2,464
J. M. Ceballos & Co	1,680
D. A de Lima & Co.	400
Total	52,157
SEPT. 13.—By the *Regulus*=Greytown:	
Otto G. Mayer & Co.	1,200
K. Mandell & Co	200
W. R. Grace & Co.	100
Eggers & Heinlein	100
Total	1,600
SEPT. 14.—By the *Clement*=Maranham:	
G. Amsinck & Co.	1,000
SEPT. 17.—By the *Alene*=Cartagena:	
D. A DeLima & Co	7,000
Kunhardt & Co.	1,500
A. N. Rotholz & Co	300
H. W. Peabody & Co	200
Total	9,000
SEPT. 18.—By the *Buffon*=Bahia:	
Reimers & Meyer	8,000
SEPT. 18.—By the *Yucatan*=Mexico:	
H. Marquardt & Co.	700
E. Steiger & Co.	500
Total	1,200
SEPT. 18.—By the *El Monte*=New Orleans:	
W. H. Crossman & Bro.	4,500
SEPT. 21.—By the *City of Pará*=Colon:	
Andreas & Co	6,617
A. P. Strout	4,850
Flint, Eddy Co.	2,724
Samper & Juinenez	2,500
J. Aparicio & Co.	2,473
R. F Cornwell	2,020
Munoz & Espriella	1,406
Jacobo Baiz	613
Eggers & Heinlein	243
Total	23,596
SEPT. 21.—By the *Plessey*=Cape Gracias:	
Eggers & Heinlein	2,000
E Zarauz & Co	1,000
Total	3,000
SEPT. 23.—By the *Advance*=Colon:	
Jacobo Baiz	13,600
G. Amsinck & Co	9,451
A. Santos & Co.	9,180
Wallace Muller & Co	9,000
Roldan & Van Sickle	7,797
William R. Grace & Co	6,124
Dumarest & Co.	2,919
I. Brandon & Bro.	1,553
Hirzel, Feltman & Co.	1,713
A. M. Capen Sons	542
Total	63,564
SEPT. 23.—By the *Craigmore*=Vera Cruz:	
Graham, Hinckley & Co.	800
SEPT. 25.—By the *Flamborough*=Belize:	
Eggers & Heinlein	1,800
F. Probst & Co.	1,000
Total	2,800
SEPT. 25.—By the *Vigilancia*=Mexico:	
Thebaud Bros.	1,200
H. Marquardt & Co.	500
Hughes & Co.	200
E. Steiger & Co.	300
Total	2,200
SEPT 26.—By the *El Dorado*=New Orleans:	
Earle Brothers	11,500
Albert T. Morse	3,500
Total	15,000
Total Centrals for September	273,553
Total for August	259,101
Total for July	183,956
Total for June	194,270
Total for May	317,000
Total for April	168,072
Total for March	290,283
Total for February	239,251
Total for January	341,029

AFRICANS.

	POUNDS.
SEPT. 2.—By the *Manitoba*=London:	
Reimers & Meyer	6,000
SEPT. 2.—By the *Veendam*=Rotterdam:	
George A. Alden & Co.	6,700
SEPT. 2.—By the *Bovic*=Liverpool:	
Reimers & Meyer	51,500
George A. Alden & Co.	22,500
Total	74,000
SEPT. 3.—By the *Friesland*=Antwerp:	
George A. Alden & Co.	8,500
SEPT. 6.—By the *Aurania*=Liverpool:	
Reimers & Meyer	2,500
SEPT. 6.—By the *Britannic*=Liverpool:	
American Wringer Co.	8,700
SEPT. 7.—By the *Peninsular*=Lisbon:	
George A. Alden & Co.	110,000
Hagemeyer & Braun	22,500
Total	132,500

SEPT. 6.—By the *Persia*=Hamburg:
Reimers & Meyer 12,400

SEPT. 9.—By the *Amsterdam*=Rotterdam:
George A. Alden & Co 38,000

SEPT. 9.—By the *Cevic*=Liverpool:
George A. Alden & Co. 84,200
Otto G. Mayer & Co. 23,000
Total 107,200

SEPT. 10.—By the *Mississippi*=London:
George A. Alden & Co. 11,000

SEPT. 14.—By the *Etruria*=Liverpool:
Reimers & Meyer 6,200

SEPT. 14.—By the *Paris*=Southampton:
Reimers & Meyer 10,700

SEPT. 13.—By the *Southwark*=Antwerp:
Otto G. Mayer & Co. 13,500

SEPT. 15.—By the *La Gascogne*=Havre:
J. D. Nordlinger 2,200

SEPT. 16.—By the *Tauric*=Liverpool:
George A. Alden & Co. 46,200
R. F. Downing & Co. 4,000
American Wringer Co. 2,500
Total 52,700

SEPT. 18.—By the *Servia*=Liverpool:
George A. Alden & Co 23,000
Reimers & Meyer 22,200
Total 45,200

SEPT. 22.—By the *Taormina*=Havre:
Otto G. Mayer & Co 10,000

SEPT. 19.—By the *Dania*=Hamburg:
Reimers & Meyer 42,000
Albert T. Morse 12,600
George A. Alden & Co. 8,800
Total 63,400

SEPT. 23.—By the *Nomadic*=Liverpool:
George A. Alden & Co. 40,000
Reimers & Meyer 25,000
Otto G. Mayer & Co 6,500
Total 71,500

SEPT. 25.—By the *Teutonic*=Liverpool:
Otto G. Mayer & Co. 15,000
W. A. Brown & Co. 5,500
George A. Alden & Co 5,300
Total 25,800

SEPT. 26.—By the *Patria*=Hamburg:
George A. Alden & Co. 6,700
Albert T. Morse 100
Total 6,800

SEPT. 27.—By the *New York*=Southampton:
W. A. Brown & Co. 5,000

SEPT. 28.—By the *Umbria*=Liverpool:
R. F. Downing & Co. 500

SEPT. 30.—By the *Georgic*=Liverpool:
George A. Alden & Co. 36,000
Reimers & Meyer 39,500
Total 75,500

Total Africans for September 794,800
Total for August 524,400
Total for July 516,400
Total for June 322,600
Total for May 884,100
Total for April 367,200
Total for March 374,554
Total for February 441,500
Total for January 582,000

EAST INDIAN.

SEPT. 1.—By the *Colorado*=London: (POUNDS.)
Reimers & Meyer 21,700

SEPT. 1.—By the *St. Louis*=Southampton:
W. A. Brown & Co. 13,000

SEPT. 2.—By the *Manitoba*=London:
Reimers & Meyer 18,700

SEPT. 9.—By the *Cevic*=Liverpool:
George A. Alden & Co. 12,100
Reimers & Meyer 12,700
Total 24,800

SEPT. 17.—By the *Mohawk*=London:
Reimers & Meyer 92,200
Otto G. Mayer & Co. 39,000
Total 131,200

SEPT. 23.—By the *Mobile*=London:
George A. Alden & Co. 170,000
Reimers & Meyer 154,000
Total 324,000

SEPT. 26.—By the *Patria*=Hamburg:
Robert Soltau & Co. 12,500

SEPT. 27.—By the *New York*=Southampton:
Reimers & Meyer 5,000

SEPT. 30.—By the *Massachusetts*=London:
W. A. Brown & Co. 39,000

Total East Indian for September 589,900
Total for August 253,100
Total for July 305,400
Total for June 241,100
Total for May 118,900
Total for April 451,000
Total for March 487,300
Total for February 170,000
Total for January 28,800

RECAPITULATION.

	POUNDS.
Pará—direct imports	1,335,900
Pará—via Europe	223,700
Centrals	273,533
Africans	794,800
East Indian	589,900
Total at New York for September	3,217,833
Total for August	1,831,101
Total for July	1,686,986
Total for June	1,788,070
Total for May	2,971,400
Total for April	3,142,672
Total for March	4,858,383
Total for February	3,080,151
Total for January	4,038,229

BOSTON ARRIVALS.

SEPT. 4.—By the *Lancastrian*=Liverpool: (POUNDS.)
George A. Alden & Co.—African 22,100
George A. Alden & Co.—East Indian 23,600

SEPT. 6.—By the *Borderer*=London:
George A. Alden & Co.—East Indian 6,300

SEPT. 9.—By the *Cambroman*=Liverpool:
Reimers & Meyer—African 9,500

SEPT. 13.—By the *Virginian*=London:
George A. Alden & Co.—East Indian 70,000

SEPT. 14.—By the *Kansas*=London:
Reimers & Meyer—African 4,900

SEPT. 15.—By the *Gallia*=Liverpool:
George A. Alden & Co.—African 2,000

SEPT. 20.—By the *Remos*=Hamburg:
George A. Alden & Co.—African 22,400

SEPT. 20.—By the *Michigan*=Liverpool:
Reimers & Meyer—African 10,000

SEPT. 21.—By the *Oranmore*=London:
Reimers & Meyer—East Indian 23,400

SEPT. 23.—By the *Oranmore*=London:
George A. Alden & Co.—East Indian. 14,000

SEPT. 24.—By the *Columbian*=Liverpool:
George A. Alden & Co.—East Indian 7,300

SEPT 30.—By the *Baltimore*=London:
George A. Alden & Co.—East Indian. 2,000

Total at Boston for September 214,500
Total for August 413,900
Total for July 180,260
Total for June 185,920
Total for May 129,620
Total for April 138,560
Total for March 106,900
Total for February 127,100
Total for January 243,900

NEW ORLEANS.

SEPTEMBER.

	POUNDS.	VALUE.
Nicaragua	19,087	$7,903

JULY EXPORTS OF INDIA-RUBBER FROM PARA.

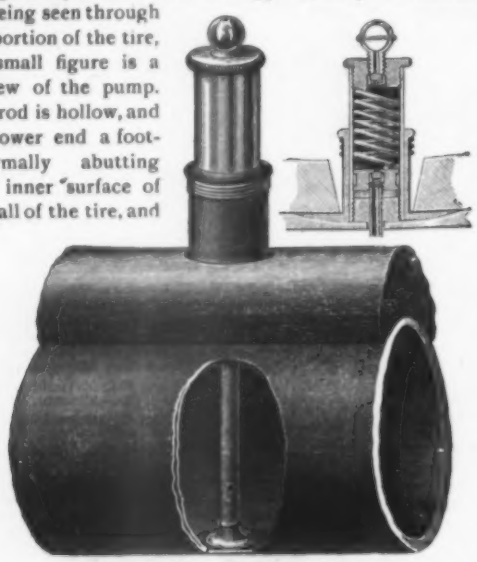
From "A Recebedoria de Rendas Publicas de Estado do Para."

[NOTE.—The figures which follow result from converting the Kilogram at 2.2 Pounds.]

EXPORTERS.	UNITED STATES.					EUROPE.					TOTAL.
	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	
Pusinelli, Prüsse & Co.	27,676	5,236	81,679	84,238	198,829	176,902	25,432	29,480	4,620	236,434	435,263
Rud. Zietz	10,560	4,437	31,504		46,501	115,192	24,310	65,426	347	205,275	251,776
Adelbert H. Alden	163,533	16,164	52,866	2,224	234,787						234,787
LaRocque, da Costa & Co.	1,870		18,480		20,350	95,744	8,228	51,480		155,452	175,802
Edmund Reeks	8,674	807	4,297	15,176	28,954				131,078	131,078	160,032
A. de Freitas & Co.						70,686	7,106	45,540		123,322	123,322
R. F. Sears & Co.	3,205		3,505		6,710	75,152	14,527	26,415		116,094	122,804
Denis Crouan & Co.						53,856	5,610	19,096		78,562	78,562
Singlehurst, Brocklehurst & Co.						18,005	13,565	3,399		34,969	34,969
Velhote, Brito & Co.						14,212	2,244	5,280		21,736	21,736
Mello & Co.						3,740	374	15,180		19,294	19,294
B. A. Antunes & Co.						2,099	673	1,958	2,893	7,623	7,623
Pires, Teixeira & Co.	2,200		2,244		4,444	924		792		1,716	6,160
From Manáos, direct	14,056	5,850	10,140	7,024	37,070	57,010	11,220	99,618	96,628	264,476	301,546
Total	231,774	32,494	204,715	108,662	577,645	683,522	113,289	363,664	235,566	1,396,031	1,973,676

AN AUTOMATIC BICYCLE TIRE INFLATER.

THIS is a device for keeping the pneumatic tire of a wheel inflated to the desired degree, the device being adjustable for maintaining a hard or a soft tire, as may be preferred. It has been patented by Philip W. Stanton, of San Francisco, Cal. The large figure represents the device applied, the piston rod of the pump being seen through a cut-away portion of the tire, while the small figure is a sectional view of the pump. The piston-rod is hollow, and has at its lower end a foot-piece normally abutting against the inner surface of the outer wall of the tire, and



STANFORD'S AUTOMATIC TIRE-INFLATER.

an air-exit port communicating with the interior of the tire. There is in the piston head a port controlled by a spring-pressed valve, and in the head of the cylinder is a port formed in the plug of a dust-filter screwed into the head, the latter port being also closed by a spring-pressed valve, while within the cylinder and between its head and the piston is a spring to return the piston. The connection between the piston and cylinder and the wheel is made by a flexible sleeve, a foot-flange of which is clamped between the outer surface of the rim and the inner wall of the tire, the packing and sleeve allowing the parts to yield to side strains on the piston-rod. The desired degree of tire-expansion is obtained by varying the projection of the piston-rod into the tire by screwing the rod farther into or out of the piston, or by similarly adjusting the foot-piece, or by the adjustment of the encircling sleeve. In operation, each time the tire presses upon the ground and is compressed at the point opposite the foot of the piston-rod, the upward movement of the latter allows the air in the cylinder to pass into the tire, and on the piston being forced downward by the spring air is drawn into the cylinder, the air drawn in passing through a filtering diaphragm designed to free it from dust.

Free Want Department.

WANTED.—A man who thoroughly understands the rubber boot and shoe business in all its details, competent to make estimates and to act as superintendent. Address "X Y Z," Care of INDIA RUBBER WORLD (Oct.)

WANTED.—A rubber boot and shoe salesman who has a trade in the northwest of $70,000 annually, is open for an engagement for 1896. Addre s, "H. W. S.," Care of INDIA RUBBER WORLD. (Oct.)

POSITION WANTED by a young man who has traveled and has had thorough experience in the mechanical line. One known to the New England trade. Address, R., care of INDIA RUBBER WORLD. (Oct.)

WANTED.—By a successful traveling salesman having the whole of New England for a territory, a good side line to handle strictly on commission. Address, J. A. T., INDIA RUBBER WORLD office. (Oct.)

WANTED.—One three roll lining calender; one three roll friction calender and one sueing calender, second-hand stating particulars and price. Address, "second-hand," care of INDIA RUBBER WORLD.

POSITION WANTED—By a man who thoroughly understands mixing, compounding, and calendering fine rubber goods. Have ten years experience in the druggist sundry and specialties business, and am considered a first-class man. Address, "Henry," care of INDIA RUBBER WORLD. (Sept.)

WANTED.—Position by a man experienced in the manufacture and sale of rubber goods. Address, "Experience," care of INDIA RUBBER WORLD. (Sept.)

A COMPETENT CALENDER man desires position. Can compound and run all bicycle stock. Also thoroughly understands the manufacture of pneumatic tires. "Calender," care of INDIA RUBBER WORLD. (Sept.)

WANTED.—Sole calender and heel press for cash. Address, with description and price, T. S. V., 22 Pitt street, Boston, Mass. (Sept.)

YOUNG MAN, age 19, with 4 years experience and A 1 references, desires position in rubber clothing house. Address, Henry Menzel, 516 Washington street, Hoboken, N. J. (Sept.)

WANTED—Two or three experienced hard rubber turners, those who are used to fountain pen work preferred. Apply to or address H. P. & E. Day, Seymour, Conn. (Sept.)

WANTED—A good calender man, one used to running tire stock. Spaulding & Pepper Co., Chicopee Falls, Mass. (Sept.)

SALESMAN, with experience east and West, wants position with first-class druggist sundry house. A 1 reference; thoroughly posted in line and with the trade. Address J. W. V. P., care of INDIA RUBBER WORLD. (Aug.)

AN engineer and machinist capable of taking entire charge of steam plant and of building all machinery for rubber factory desires position. Can furnish best of references, including last employers. Address, A. A. B., care of INDIA RUBBER WORLD. (Aug.)

PARTIES wishing a select line of rubber compounds for all mechanical goods will find it to their advantage to address O. B., care of INDIA RUBBER WORLD. (Aug.)

WANTED—A position as superintendent or foreman. Am thoroughly acquainted with the rubber business, was fifteen years with the Silvertown Rubber Co., London, England; can manufacture golf balls, wagon and bicycle tires, inner tubes and stems, and other mechanical rubber goods, having splendid compounds for all. Address W. T. D., Campello, Mass. (Aug.)

WANTED.—Position in a rubber clothing factory by a man who is capable of acting as superintendent of proofing department but who is desirous of securing any position to get a start in this country. Address, P. R. W., care of INDIA RUBBER WORLD. (July.)

WANTED.—By a chemist well acquainted with the rubber business, a position in a rubber factory. The best of references given. Address, H., care of INDIA RUBBER WORLD. (July.)

WANTED.—By a man of thirty with nearly fifteen years' experience, a position with a rubber factory or large jobbing house, can furnish best of references. Address, D. care of INDIA RUBBER WORLD. (July.)

FOR SALE.—A quantity of hard rubber turnings. S. R. Brown, Wappingers Falls, N. Y. (July.)

WANTED.—Man to take entire charge of druggist sundries department in large rubber works. Must have large experience and be perfectly competent. Address, "A" P. O. Box 6783, Boston, Mass. (July.)

WANTED.—Second hand devulcanizer in good condition, about 12 inches by 36 inches. State lowest price. Address, Devulcanizer, care INDIA RUBBER WORLD. (July.)

For a number of years
THE SETH THOMAS CLOCK CO., OF THOMASTON, CONN.,
has done a good deal of work for Electrical Companies, and would be glad to increase this line of business. They will make estimates for any article akin to Clock work for which a model is furnished, and which is wanted in quantities. Address,
SETH THOMAS CLOCK CO., 49 Maiden Lane, New York.

FOR SALE.
Mackintosh Rubber Cloth Clippings.
METROPOLITAN RUBBER CO.,
Foot Grand St., East River, - - NEW YORK CITY.
Mention the India Rubber World when you write

Bi-Sulphide of Carbon. CHLORIDE OF SULPHUR. ALCANNIN PASTE. Specially prepared for Vulcanizing India Rubber. Samples and Quotations on application.
EDWARD R. TAYLOR, Manufacturer, CLEVELAND, O.
Mention the India Rubber World when you write. Correspondence Solicited.